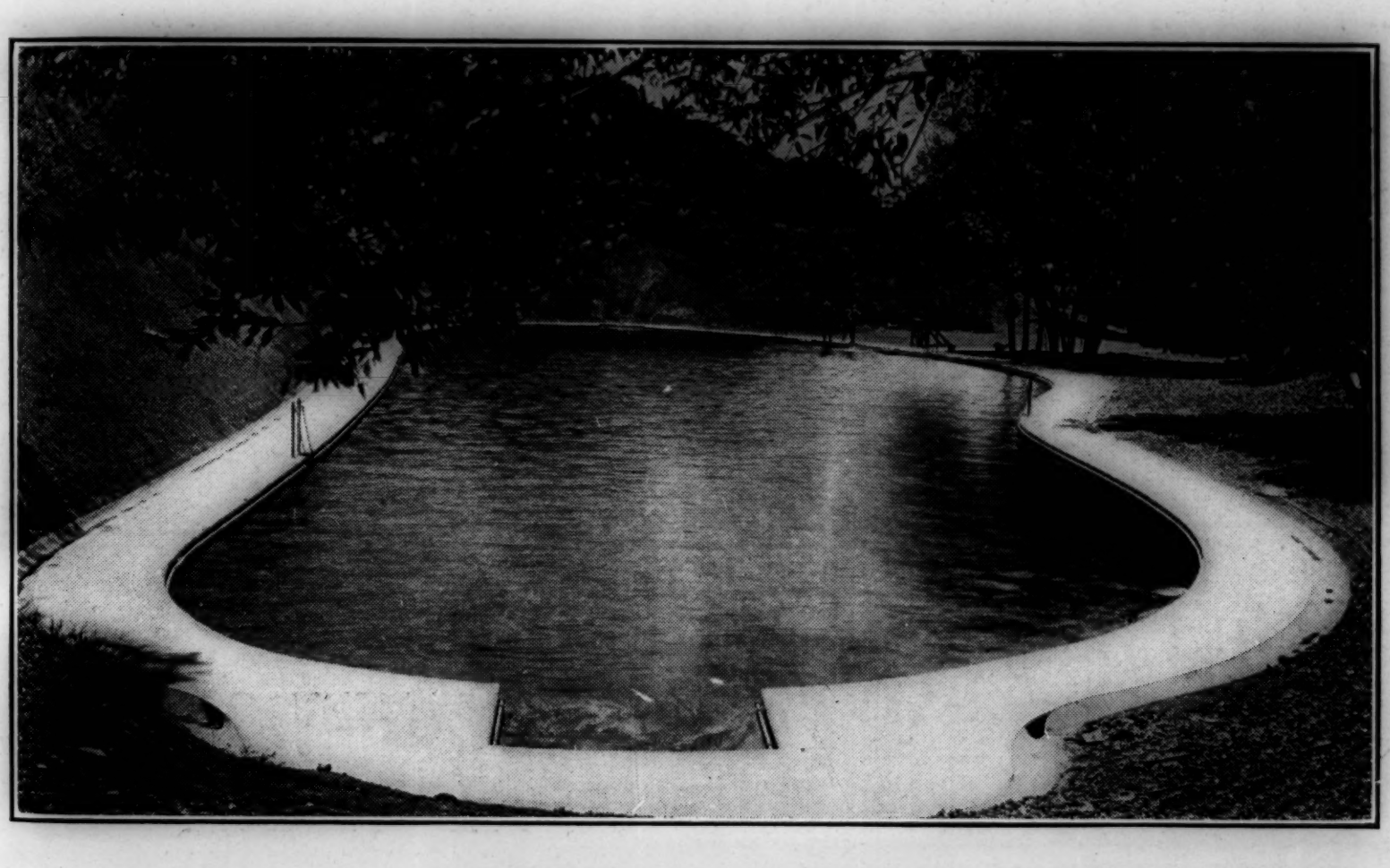
CALIFORNIA STATE BOARD OF HEALTH

MONTHLY BULLETIN



The men's concrete swimming pool of the University of California, Berkeley. The blue-green water of the pool, the dark green of the surrounding foliage and the browns of the landscape produce a fine color effect. To this pool have recently been added an up-to-date concrete filtration plant and circulating pump system whereby the pool water will be purified and used repeatedly for a month or more.

¶ SANITATION OF SWIMMING POOLS

¶ MARCH, 1919

California State Board of Health.

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CALIFORNIA STATE BOARD OF HEALTH

Devoted to the Prevention of Sickness and Death

Entered as second-class matter, August 15, 1905, at the post office at Sacramento, California, under the Act of Congress of July 16, 1894. Acceptance for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 27, 1918.

Sent free, on request, to any citizen of California.

WILFRED H. KELLOGG, M.D., Secretary and Executive Officer . Editor
GUY P. JONES, Assistant to the Secretary . . Associate Editor

Direct Control Methods Produce Best Results.

The tuberculosis death rate in the United States has been reduced greatly, but no really great reduction was made in the prevalence of tuberculosis until large numbers of active cases of the disease were segregated and further infections thus prevented. Similarly, no great reduction will be made in the prevalence of the venereal diseases until large numbers of active cases are segregated and treated. For this reason the suppression of prostitution is the most available weapon in venereal disease control, *provided that infected prostitutes are given treatment and prevented from infecting others.* Clandestine prostitution is not going to be eliminated at once; neither will tuberculosis be eradicated immediately, but the most direct method of control, isolation and treatment of cases, will produce the greatest results in reducing the prevalence of these diseases.

★ ★ ★

Venereal Disease Quarantine Upheld.

The right of health authorities to isolate or quarantine persons afflicted with venereal diseases has been upheld in a decision just handed down by the Second District Court of Appeal in an opinion written by Justice Shaw and concurred in by Chief Justice Conrey and Justice James.

The case arose over the refusal of a patient in a Los Angeles hospital to remain in quarantine. The health authorities held that they had the right either to examine or to hold the patient until the patient voluntarily submitted to examination.

The appellate court upheld this contention and the petitioner was remanded to the custody of the health authorities.

★ ★ ★

When Will Whooping Cough Be Placed Under Control?

In the last five years 1148 California children have died of whooping cough, a preventable disease. This large number of deaths could be reduced greatly if all cases were placed under strict supervision. Too many parents allow children suffering from whooping cough to mingle with

other children and disregard all precautions for preventing the infection of others. The large number of deaths from this disease constitute an important factor in the making of a high infant mortality, but that is not the whole tragedy, for disastrous complications occur more frequently and in more severe form following whooping cough than any other of the communicable diseases common to children. It is time that parents and health officers begin to exercise rigid control over whooping cough.

* * *

A Million and a Half Dollar County Hospital.

The new million-and-a-half-dollar county hospital to be built in Alameda County will be a factor in the community for repairing and returning to active service good citizens who are disabled and will not be a dumping ground for professional indigents who scheme to live on the bounty of the community, according to Dr. R. G. Brodrick, superintendent of the new institution. He states further, that it will not be a place where the average decent citizen will be ashamed to go for medical aid nor a place where he is made to feel that he is an object of charity. This is the new order of things and is in line with Dr. Brodrick's achievements in the magnificent San Francisco Hospital, the superintendency of which he is leaving to take charge of the building of the Alameda County institution.

* * *

Pasadena's Municipal Maternity Hospital.

The city health department of Pasadena will establish a municipal maternity hospital, chiefly for the benefit of the residents of the Mexican quarter and the industrial section of the city. The health officer, Dr. J. Severy Hibben, states that the new institution will be an important adjunct to the child welfare work of the Pasadena health department. The baby clinic of the department has been established for some time and the establishment of the city maternity hospital will give Pasadena one of the best equipments for child welfare work of any city in the state.

* * *

Another Offensive Against Mosquitoes.

The city commissioner of Long Beach has given authorization for the city's annual war upon mosquitoes. A foreman and ten laborers have been engaged to do the fighting and 5,000 gallons of distillate for munitions of war have been purchased. Dr. L. M. Powers, commissioner of health of Los Angeles, will co-operate with Dr. Ralph L. Taylor, city health officer of Long Beach, and the county health officer, Dr. J. L. Pomeroy, in the eradication of mosquitoes in the vicinity of Long Beach. The shipbuilding plants and canneries will also assist in this work which was carried on so successfully last year by all concerned.

* * *

Cleanliness First in Pure Milk Production.

Sediment in the bottom of a milk bottle shows that someone was careless in the production, care or handling of the milk. Clean milk can never be produced from dirty cows in dirty surroundings, handled in dirty utensils by a dirty dairyman. Cleanliness is the first factor in the production of pure milk and no dairy with unsanitary conditions can produce milk fit for human consumption.

"Flaying the Germ Theory."

A Canadian physician who believes that pathogenic organisms play no part in the cause of disease is distributing in California his latest pamphlet entitled, "Flaying the Germ Theory." In this publication he takes a fling at sunlight as a destroyer of bacterial growth, ridicules the chlorination of impure drinking water and condemns the quarantine of cases of communicable disease. According to his ideas, typhoid, pneumonia and tuberculosis have only chemical origin. Regarding contagious diseases, such as measles and whooping cough, he says, "the causes are obscure, but the evidence points to an emanation thrown off by the patient, invisible to the eye or microscope, and analagous to the scent thrown off by a flower—present but invisible—or the emanation of plants, such as curari and poison ivy, which have the property of poisoning susceptible persons coming near them, even if not touched or handled, but even if the causes of these diseases mentioned is obscure there is no evidence that they are caused by germs." Even with this apparently fantastic point of view he is opposed to any regulations for control. If it's germs, he's agin' 'em.

* * *

University to Give Course in Eugenics.

The Extension Division of the University of California has announced a course in Eugenics, given Tuesday and Friday evenings in the San Francisco Main Public Library, Civic Center. The course consists of fifteen lectures by Prof. Samuel J. Holmes and the following subjects are to be covered:

Problem of Human Evolution.
Preliminary Survey of the Field.
The Laws of Heredity.
The Transmission of Human Defects.
Mode of Inheritance of Insanity. Feeble-mindedness, and other forms of mental defection.
The Inheritance of Mental Ability.
The Hereditary Factor in Crime and Delinquency.
The Decline of the Birth Rate.
The Relative Birth Rates of Different Classes of the Population.
Causes of the Decline in Birth Rate.
Hereditary Influence of Alcohol and Disease.
Natural Selection of Man.
The Various Forms of Natural Selection Among Human Beings.
Racial Influence on Infant Mortality.
War and the Race.
An Estimate of the Different Ways in Which War May Modify Human Inheritance.
Sexual Selection in Men. Its Past and Present Influence and Its Possibilities.
Industrial Development and Racial Inheritance.
The Elimination of Defectives.
Sterilization and Segregation.
Religion as a Factor in Race Development.
Religious Selection Past and Present.
The Present Trend of the Race.
General Summary and Discussion of Various Forces Working Towards Racial Deterioration or Improvement.

SANITATION OF SWIMMING POOLS.

By C. G. GILLESPIE,

Director Bureau of Sanitary Engineering, California State Board of Health.

Within the last few years—since 1910—a positively new municipal enterprise has come into being in the form of the municipal swimming pool, and with it have come new sanitary problems. So little is available on the general subject of correct swimming pool construction that an inspection of almost any existing pool leaves the impression that with the same outlay a much more successful and praiseworthy installation could have been obtained if the fundamental features had been thoroughly appreciated. It is hoped that this bureau and, more immediately, this paper, may be in some degree a factor in clarifying the present situation for many municipal officials. The present paper is intended more for those who are interested in a prospective pool than for the managers and operators of an existing pool. As to just how to get the best results out of an existing pool is a matter to be considered for each pool individually, knowing its facilities and equipment.

Swimming Pool Legislation.

California was one of the first states to enact swimming pool legislation, chapter 63, 1917. The main provisions of this act are (1) that the State Board of Health is given general supervision over the sanitation, healthfulness, cleanliness and safety of swimming pools and bathhouses and is enabled to make and enforce such rules and regulations as are thought proper; (2) that no pool or bathhouse can be constructed, enlarged or modified, nor can a pool legally operate, without a specific permit from the State Board of Health granted pursuant to an application by the management for its construction, modification or operation, as the case may be; (3) the penalty for violation of any of the provisions of the act includes abatement, injunction and fine or imprisonment of employees, agents or officials.

No regulations have yet been adopted by the board, as provided in this statute, for the principal reason that it has not yet been possible to determine what standards should be set. There are no precedents to guide us in this matter. Views on so important a subject as the quality and limit of pollution of the pool water are scarcely advanced, much less crystallized. All sorts of designs are featured for such pool details as inlet and outlet, waste gutters, walk drainage and even the shape of the pool. This should not be so. There is no reason why swimming pool design in the main can not be reduced to comparatively few types, depending upon such controlling considerations as the mode of handling the water supply, location of the pool, and the like. All should incorporate certain fundamental features to meet certain sanitary requirements. From that point on, each pool may be made as ornate and individualistic as the purse or taste permits.

We ourselves are probably no farther along than other sanitarians working in the same field. Our accomplishments to date may be said to include the registry of the more important pools in California and the granting of temporary permits of indefinite term which protect them in their operation. During the summer of 1918 a number of

pools were kept under periodic inspection and almost daily examinations of the plant and water supply of two pools near headquarters in Berkeley were carried on. The subject has been continuously before us. We hope it will be possible to formulate a set of reasonable swimming pool regulations during the coming year. Pending the framing of such regulations, it appears advisable to now present the problem with such conclusions and considerations as we can advance at this time. Many of these conclusions are tentative only but at that they may afford better guidance than has been heretofore available.

Arguments for Public Bathing.

Few people appreciate how strongly swimming appeals to the rising generation nor in how many ways it is beneficial and enjoyable. Swimming is to be commended for other reasons than the practical justification that it may some time enable one to save himself from drowning. In all climates it is one of the best of exercises. One can not observe a swimmer in action without being impressed with the strength, endurance and grace, and the even distribution of his muscular development. To children and young people it is a most delightful and exhilirating recreation, for which there is no substitute. In promoting the general health and fortifying the body against colds the swimming pool, especially the outdoor pool, and shower are well known. In the warmer climates, in addition to all these benefits, the swimming pool is a most agreeable means of keeping the body cool. It is quite to be expected that the greatest activity and popular interest in public swimming are to be found in the interior valleys and in the south. To some, the swimming pool is unfortunately a substitute for a bath. However, it would seem that the management and other bathers should themselves rebel against such a practice and see to it that one who would employ a public pool for this purpose should not be permitted to use it. The thought of swimming in a pool containing the effete matter of an unclean individual is loathsome to most people.

Public Health Menace in Swimming Pools.

A wide variety of diseases have been attributed to swimming pools, including typhoid fever, dysentery, all sort of skin infections, diseases of the nose and throat, eye infections, notably "pink eye," ear infections and colds of various degrees of severity. From the present day knowledge of the nature and mode of transmission of most of a host of diseases, there is no reason why a long list of infectious diseases can not be spread through the medium of the swimming pool. In a public swimming pool the opportunity for disseminating infectious material from ill persons, and especially from those ill persons who are apparently well, to those who are healthy is always present. The water supply is constantly receiving the mucous expectoration and mouth rinsing of every bather, as well as the effete matter from his body. Skin eruptions are usually covered by the bathing suit and are therefore invisible. Suits, towels and drainage surfaces are constantly exposed to infection. The chain of transmission of disease in and about a swimming pool is perfectly direct. The problem of sanitation is therefore easily expressed.

(1) The water supply should be of adequate dilution by "pure" or "purified" water recirculated to result in so broad a scattering of the infective material that the risk of infection of a healthy bather is relatively small. In addition, the pool should be arranged for the complete and more or less continuous removal of *all* foreign matter from the pool water. Where the facilities for accomplishing these results are inadequate, the problem is to determine what maximum patronage is permissible by regulation to keep the pool at or above the standard set.

(2) That portion of the structure receiving a large amount of drainage from bathing suits and sputum of bathers, *i. e.*, drain gutters, walks, runways and lounging surfaces, should present a minimum chance for contact with the hands, suits and bodies of other bathers and a maximum opportunity for quick drainage into a sewer. Such surfaces should be of an easily cleaned and nonabsorptive material.

(3) Suits and towels should be so laundered that any infection on them is completely destroyed before they are again put to use.

(4) Measures for personal cleanliness, *i. e.*, thorough shower or tub baths, with soap, should be enforced to the limit.

(5) Firm rules for the exclusion or expulsion of any persons suffering from symptoms of disease should be adopted and enforced.

Outdoor or Indoor Pool.

In recent years the outdoor swimming pool has increased greatly in popularity. At the present time there are 109 outdoor pools in California and 83 indoor pools. A great impetus was given to construction of outdoor pools in 1916 and 1917, but for obvious reasons there was little activity in any kind of swimming pool construction in 1918. The following table gives an idea of the increasing popularity of swimming pools in the state:

TABLE I.

Tabulation of Swimming Pool Installations in California Since 1880, by Ten-Year Intervals.

Period	Number installed in period	Total
1880–1890	5	5
1890–1900	11	16
1900–1910	38	54
1910–1918 (8 years)	138	192

Some of the finest pools, from an architectural standpoint, are indoor pools, but there is no reason why an outdoor pool can not be made exceedingly ornate and interesting. From a sanitary point of view there is not a great difference in the problems except in the matter of growth of vegetable moss or algæ, which in outdoor pools may become exceedingly troublesome if careful provision is not made for its elimination.

Indoor pools are often poorly located in basements where ventilation and lighting are inadequate and, in general, the ventilation of rooms containing indoor pools is not good, with the result that the atmosphere is heavy and depressing. This is not true of the outdoor pool. Here also there are opportunities for lounging in the sun. Perhaps one reason for the greater popularity of the outdoor pool is that it approximates more nearly the "swimming hole" of boyhood recollection. The cost of construction of an outdoor pool is less than that of an indoor pool where the cost of the building must be charged against the pool. On the other hand, the outdoor pool is seldom usable the entire year.

Size, Proportions and Main Features of Pools.

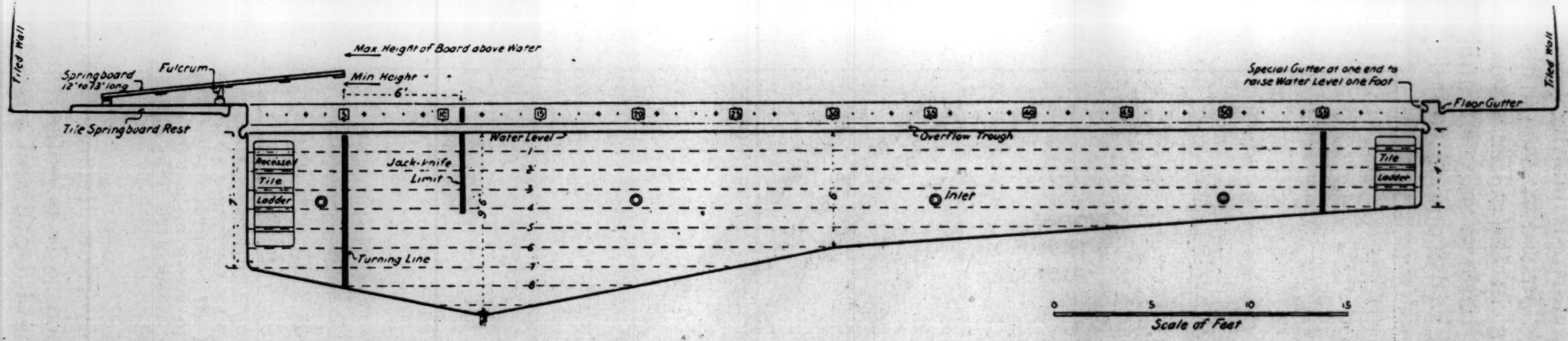
The pool should be made as large as can be financed to comfortably accommodate the expected summer holiday crowds, as this is the patronage which is the largest and one most apt to result in breaking down the pool sanitation if it is at all inadequate. In many instances the quantity of water supply available will limit the size of pool. As a rough figure, 400 gallons of "pure" or "purified" water per bather is needed. It seems fairly certain that ultimately there must be established by or for each pool a schedule of operation and a limit of patronage which it is known will maintain a prescribed sanitary condition. Hence, if the water supply is limited, it is unwise to make the pool large.

Small town pools appear to require designing for about 100 persons per thousand population. The average attendance will of course run much less than this but the size of pool, quantity of water supply, number of dressing rooms, toilets, showers, bathing suits and towels must be adequate for the maximum patronage.

New pools should by all means be laid out to conform to the sizes and proportions required to make swimming records made in them "official," as this permits featuring competitive water contests, which greatly popularize the establishment. The intercollegiate swimming rules require that the length of pool shall be in multiples of 15 feet and the width in multiples of 5 feet. The general proportions of the pool should be long and narrow. The length should be from three to four times the width. Weak swimmers usually swim across the tank while distance swimmers will take the lengthwise course. The long narrow proportion also favors better circulation and freedom from "dead water" in the pool.

If the water supply is limited to say 30 gallons per minute or 43,000 gallons in 24 hours, under the best manipulation and without filtration, about 100 bathers could be accommodated and a pool 60 by 20 by 25 feet would be the largest it is wise to build.

Shape of bottom and depth are important features. For safe diving and to comply with the intercollegiate swimming rules, the minimum depth should be 3 feet and the maximum at least 8 feet. Water polo requires that 60 feet of the length of the pool should be 6 feet or more in depth. For a children's pool the minimum depth of 3 feet is too great. If the patronage includes children, a small shallow wading pool, possibly attached to the shallow end of the main pool, should be provided. The best shape for the main pool is one which provides a maximum depth at a point just forward of the end of the spring board and a broad area toward the shallow end suitable for general swimming and wading. Most bathers remain in water not over 5 feet in depth and this portion of the pool floor should have a slope of not over 1 foot in 15 feet. As the deep end of the pool usually has rather steep slopes, the change from the flat slope to the steep slope should be made at a depth of not less than 5 feet 6 inches as a protection against inexperienced swimmers slipping if they chance to walk off the flat slope.



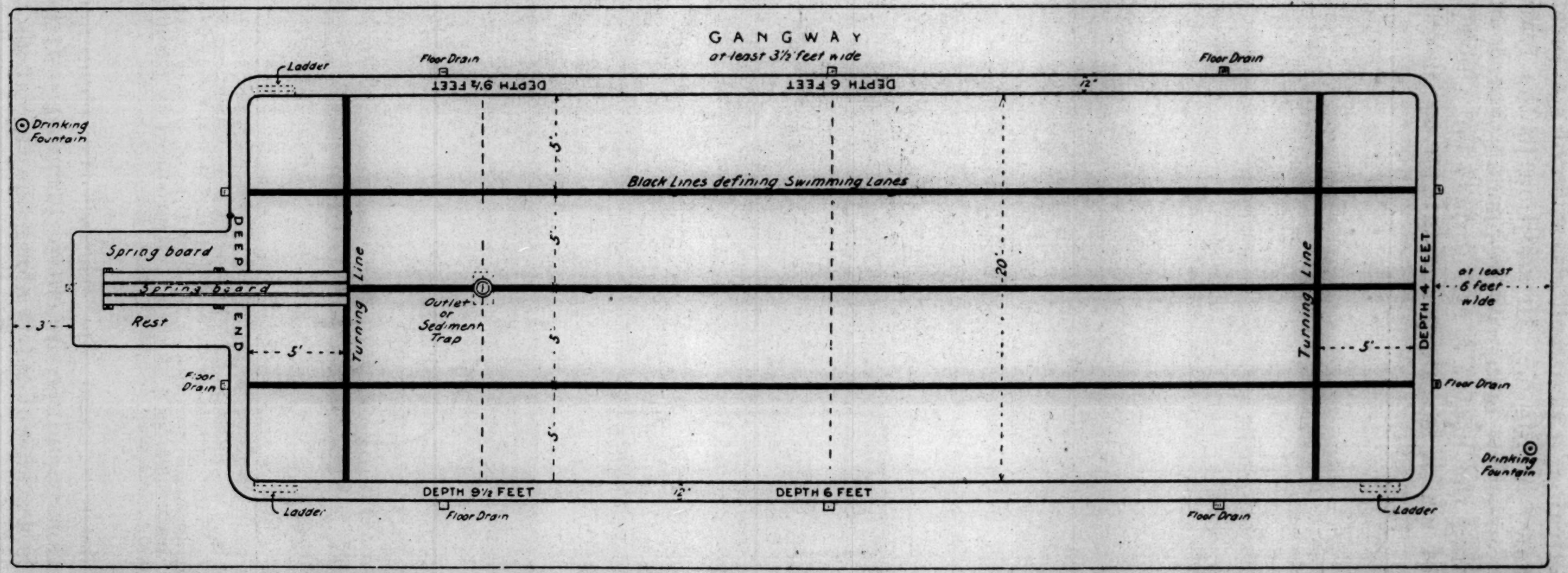


Fig. I. PLAN AND ELEVATION OF TYPICAL SWIMMING POOL. "The pool is planned as a standard for swimming and diving events. It is, therefore, sixty feet long and twenty feet wide, has a modern spoon-shaped bottom, is divided into four swimming lanes of equal width with turning lines at both ends and has the jackknife limit and distances marked on the sides. The relative position of the diving board has also been indicated in diagrammatical form." (Reproduced by permission Associated Tile Manufacturing Company, Beaver Falls, Pa.)

By permission of the Associated Tile Manufacturers, Beaver Falls, Pennsylvania, a plan and elevation of a typical modern swimming pool are shown in Fig. 1. In addition to the features just discussed, this design provides many improvements not common in the older pools, including the use of a raised curb on which the bathers may sit and back of which is a deep floor gutter so placed as to be out of contact

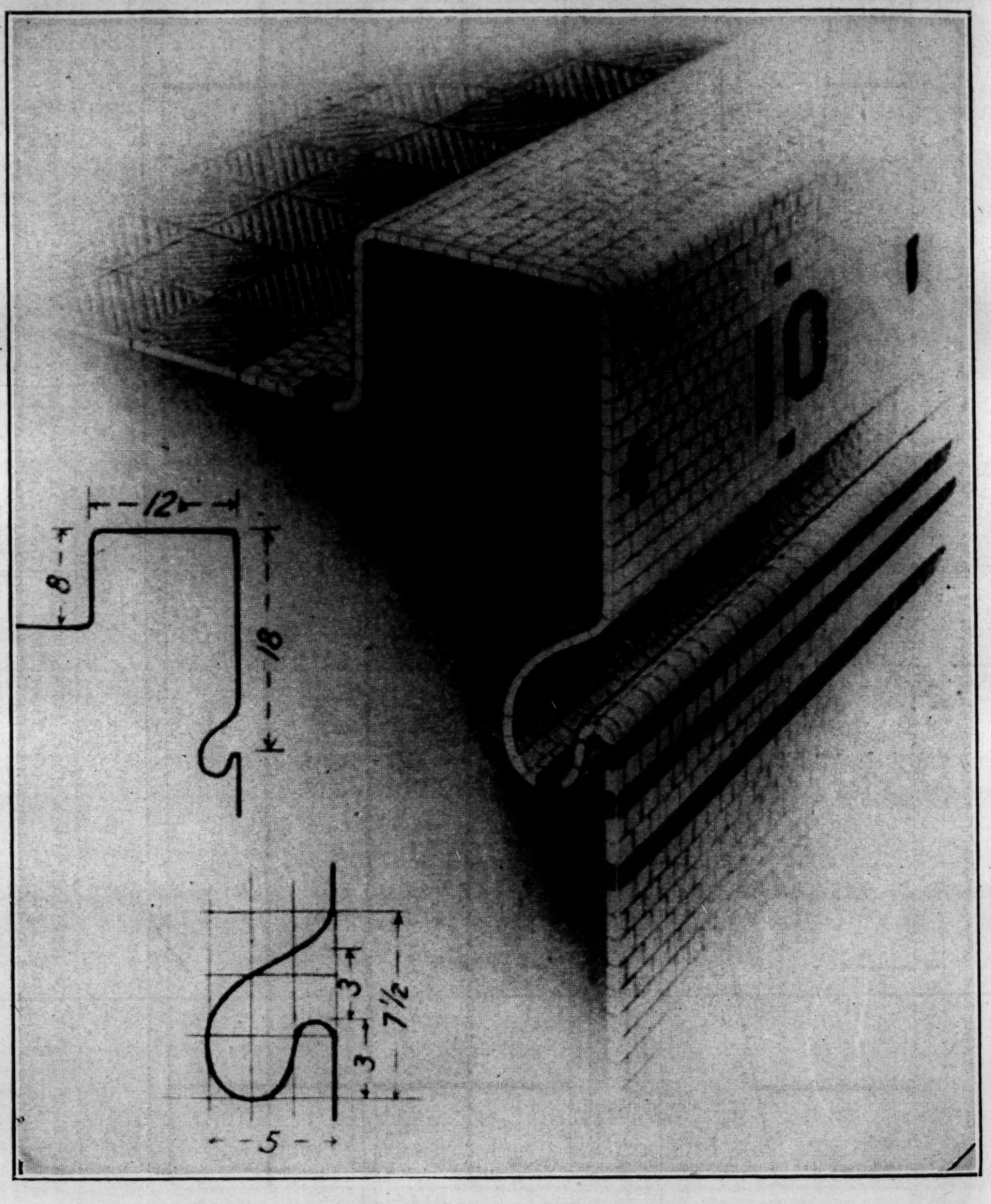


Fig. II. SKETCH OF TAKE-OFF CURB, COMBINED SPILLWAY GUTTER AND HAND RAIL. "This profile is in every detail in conformity with all requirements. The gutter is small and neat. The curb is of proper height to serve as a take-off." Note drain just back of curb. (Reproduced by permission Associated Tile Manufacturing Company, Beaver Falls, Pa.)

with bathers; also the use of the combined overflow trough and hand rail extending the entire periphery of the pool. It is noted that there is a series of inlets along one side at about mid-depth and spaced about 15 feet apart. Similar outlets, not shown on the drawing, are provided on the opposite side. A large size drain outlet is provided from the deepest portion of the pool. There are no obstructions along the pool walls.

The proper height of curb above the operating water level is 18 inches for a good take-off. Use of an overflow gutter automatically maintains this height as well as the removal of floating sputum, scum and the like. This gutter is also designed to serve as a hand rail so as to avoid any obstruction in the pool. For this reason it must have a minimum depth of about 3½ inches and for good drainage should pitch 1¼″ to 1½″ in 10 feet toward drain outlets leading to the sewer. The gutter should be recessed into the wall with not over an inch protrusion beyond the face of the wall above to cause drippage from the wall above to be carried away in the gutter rather than to re-enter the pool. A cross-section of a good shape of gutter is shown in Fig. II.

Walk drains surrounding the pool should be carefully designed. Material carried in them represents in reality the worst pollution about the pool. It contains suit drippage and a large amount of sputum and effete matter. You have probably observed or found in your own experience that bathers invariably do a great deal of "sputtering" every time they climb out of the pool, and even in the pool. Designs which provide for a pitch of the walk toward the pool without a raised curb to intercept it carry this filth to the point where bathers are most apt to lounge. In one municipal pool in California a very shallow walk gutter surrounds the pool so close to the edge that a bather can not climb out without placing his hands in the slime adhering to this gutter. The strange thing about the pool mentioned is that the new gutter was built as an afterthought and was considered to be an improvement!

Concrete, massive construction or reinforced, is the best material with which to build a pool. Wood or earth in any part of the pool will be positively forbidden. White tile make the best facing for the pool and its walkways. It is impervious and easily cleaned and rough enough to prevent slipping. White cement is often used and is more satisfactory than common cement. In several pools using the common cement finish, an effort has been made to give the pool a sanitary appearance by painting the concrete with a white enamel finish.

It goes without saying that the best inlet and outlet arrangement is one which will most quickly permit changing the entire contents of the pool. Nothing could be worse than a single inlet and a single outlet. Experiments show that the bulk of the pool is practically "dead water" when such an arrangement is used. The use of branch inlets about 10 feet apart at mid-depth, or even staggered in the vertical, along one side, with outlets similarly located on the opposite side, is highly important. Where filtration and recirculation are employed, both lines lead toward the filter but even where the available water supply seems copious it is a wise plan to so lay out the main inlet and main outlet that a filter plant can be later adapted to the pool if it should be desired.

The main drain should be at least 6 inches or 8 inches in diameter and should connect with a sewer or drainway which is known to be large enough to carry the full stream of drainage water.

Water Supply.

One of the most important and difficult standards to be set for swimming pools relates to the water supply. Rather than to prescribe a uniform manipulation of the water supply or even to specify the man-

ner of handling it in individual pools, it appears to be wiser, for the purpose of general supervision, to determine physical, bacteriological and perhaps sanitary chemical limits of pollution and to merely suggest a scheme of construction and operation which may be expected to meet the standard. In the exercise of supervision over the swimming pools, health officers would then merely obtain samples from time to time or make inspections of the mode of operation to judge the condition of the pool. The operator, however, should become so competent as to in some degree predict the results and effectiveness of each different mode of operation without waiting for the outcome of bacterial or other tests. In the beginning he will have much to do correlating and interpreting the analytical results in the light of the mode of operation. In the absence of analytical control he may at least be guided by the appearance of the water and take such measures as will keep the pool water so clean and clear that submerged bathers are easily visible.

The main requirements on the water supply are that it can maintain the pool water clean, clear and bacterially safe. It should be clean and clear for clearness' sake and for the ease of aid to a drowning person. It should be bacterially safe for health's sake. There are two distinct modes of meeting these requirements. In some pools they may be combined. The old method, which may be called a "fill and draw" plan, is to empty the pool and refill it with new water every two days to a week, depending upon the patronage, and to add a constant stream of new water between cleanings at a rate which will displace the used water at least once in two days. If this method fails it will be more likely because of the heavy cost of water or because it can not maintain proper bacterial safety and some form of disinfection may be required in addition. The clearness may not deteriorate noticeably with such frequency of change. *A pool becomes prohibitively polluted long before it begins to discolor. Clearness is not an index to the bacterial condition of the pool.*

The more modern method of handling the water supply, with a view not only to economy but to maintaining a better bacterial condition in the pool, is the rotating or circulating of the pool contents by pumps through filters of adequate capacity, after which it is chlorinated and returned to the pool as "purified" water. It is not uncommon to find that this "purified" water is actually cleaner and safer than the water used in filling the pool. When the available water supply is not sufficient to provide 200 or more gallons of new water per bather, it is believed that filtration and chlorination are imperative.

Pumping equipment and filters should be designed to completely remove and "purify" the entire contents of the pool in the course of one swimming day, or 10 to 14 hours. Our observations show conclusively that unless the water is rotated daily, algæ growths are bound to become established. There is little benefit, however, in recirculating or filtering the pool water when there is no swimming going on. The foreign matter tending to accumulate in the pool consists of, first, the floating sputum and scum which are gotten rid of by the splash over the overflow gutters; second, the finely divided discolored matter, bacteria and algæ, which permeate the pool and do not settle out readily; third, the heavier and more noticeably visible foreign matter made up of lint from bathing suits, growths of slime, cuticle, dead algæ, and

the like. This coarser material is in suspension during the day when the pool is patronized and makes a foul appearance, but within a short time after bathing is over it settles to the bottom of the pool. The filter can be effective in removing it only so long as it is in suspension and reaches the outlets. Therefore a filter should be designed and operated to handle the entire pool capacity in from 10 to 14 hours, or one swimming day. In designing it is well to figure on a capacity of 2.0 gallons per square foot of sand surface per minute. Our observations indicate that provision for the use of alum or coagulating chemicals is unnecessary with a swimming pool filter, the reason probably being that the slime in the pool water provides the coagulum naturally. Either open or closed filters appear to yield good results. The former is usually the cheaper, at least in first cost.

Chlorination of swimming pools is apparently highly efficacious. Where it is employed in connection with a circulating system it appears to impart a prolonged disinfecting property to the pool water which is able to cope with the pollution subsequently added as a result of bathing. The explanation of the longer duration of the action in swimming pools than in drinking water supplies may be that the organic matter in the swimming pool forms, with chlorine, the "chloramine compounds" which have been shown to give slower but far more lasting results than the free chlorine itself. Ordinarily, 0.5 pounds of chlorine per 100,000 gallons of water added is sufficient for swimming pool disinfection. The chemical may be added in the form of chlorine gas, in which case a chlorinator apparatus is used, or it may be used in the form of bleaching powder mixed into a solution and fed into the supply at a rate proportionate to the flow. Bleaching powder is weaker than the chlorine gas by about 70 per cent, therefore about three times as much, or 1.5 pounds per 100,000 gallons, must be used. Works for the handling of bleaching powder consist of a concrete tank holding about 300 gallons and a small concrete orifice tank for regulating the feed of the solution, besides appurtenant piping. In either case the chemicals may be applied at any point in the circulating system.

Existing pools not equipped with a circulating system may easily provide for disinfection of incoming water by either of these means and largely fortify the pool water against contamination. In pools where the supply of water is particularly low, considerable benefit may also be obtained by splashing the bleaching powder solution evenly over the entire pool just as the bathing stops, so that the wave disturbance may tend to diffuse the chemical throughout the depth of the pool and to disinfect it.

Heating the pool water may be a necessary feature where the new water is very cold and at any event the shower water must be heated quite warm. A temperature in the pool of 64° F. is quite cool while a temperature of 68° F. to 75° F. is comfortable to most people. In the case of a recirculating system, the returned water may be passed through a series of coils over an oil or coal furnace. Some heaters are equipped with steam pipes within a water chamber set in the circulating system.

Miscellaneous Features.

Dressing rooms, shower baths, lavatories and toilet rooms should be made commodious, airy and well-lighted, preferably by natural light.

Women's rest rooms, properly equipped, are an important feature. Urinals, toilets and showers should be conspicuously located. All wooden surfaces and even concrete floors should be repainted white from time to time. The general appearance can be further improved by the use of shrubs, ferns and similar plants. Floors should be of concrete, smooth surfaced, or other similar material, but not of wood. They should pitch at least $\frac{1}{4}''$ per foot toward floor drains and in all cases away from passageways or the pool, except that where the raised curb is used the gangway around the pool may pitch toward a gutter just back of this curb. Too much attention can not be given to ventilation in dressing rooms and in indoor pools.

Life-saving equipment should be conspicuously placed on both sides of the pool, consisting of a light pole about 20 feet long with a hook attached and several life buoys, with ample rope to more than stretch across the pool. One or more attendants or life guards should be within reach.

If it is not intended to send suits and towels to a commercial laundry there should be adequate equipment on the premises, patterned after that used in the commercial laundries, to thoroughly wash, rinse, disinfect and dry them. The use of soap and boiling temperature under pressure is quite efficacious in sterilizing suits and towels, but as a rule it is so little trouble to add a disinfectant to the rinsing water that this should be done also.

Forceful rules barring patronage by persons apparently ill should be posted conspicuously and rigidly enforced. Shower baths with soap, prior to entering the pool, are no small help and should be encouraged if not insisted upon.

The public comb in a bathing establishment is not approved. Patrons should bring their own combs, or the management may supply individual combs at nominal cost.

JOIN AMERICAN PUBLIC HEALTH ASSOCIATION.

The American Public Health Association, which is a vital factor in the promotion of public health throughout the United States, has started a campaign for increasing its membership from 2,500 to 5,000. This organization covers a field that is not touched by any other organization. It is open to both laymen and professional men who are public health workers. By means of its journal, published every month, valuable information relative to public health movements throughout the country is readily available. Members of the association may be admitted to membership in the sections on public health administration, laboratory sociology, industrial hygiene, vital statistics or food and drugs. Californians who are members of the association are:

Berkeley—Frank Bachman, C. G. Gillespie, William B. Herms, Prof. Chas. G. Hyde, Harry N. Jenks, Frank L. Kelly, M. D.; *Chico*—Harold F. Gray; *Coronado Beach*—Raffaele Lorini, M. D.; *Cucamonga*—H. I. Deberard; *Eureka*—A. M. Besemer; *Fresno*—R. W. Nauss, M. D.; *Los Angeles*—Norman Bridge, M. D., W. W. Beckett, M. D., William Duffield, M. D., M. Johnson, M. D., Pacific Mutual Life Insurance Company, Luther Milton Powers, M. D., J. L. Pomeroy, M. D., James R. Scott, M. D., Walter V. Brem, M. D.; *Monrovia*—R. J. Cary, B. S. M. D., Francis M. Pottenger, M. D.; *Oakland*—John Boyle Gordon; *Palo Alto*—John P. Mitchell; *Pasadena*—Fitch C. E. Mattison, J. Severy Hibben, M. D.; *Riverside*—H. R. Martin, M. D.; *Sacramento*—California State Board of Health, F. F. Gundrum, M. D., W. H. Kellogg, M. D.; *San Francisco*—Don W. Bingham, S. E., W. C. Hassler, M. D., Edward E. Johnson, M. D., Marion H. Lippman, James F. Smith, M. D., Ernest A. Victors.

Application for membership should be sent to any member of the association.

FACT OR OPINION?

Under our foolish state law, the efficacy of vaccination is a matter of opinion. It will protect those who believe in it, but it will not protect those whose "consciences" regard it as immoral or irreligious.

Curiously enough, we have never applied the same doctrine to the smallpox itself. We treat the contagiousness of smallpox as a fact, not as an opinion, and we enforce quarantine and isolation, and even transfer to the pesthouse, on all alike, quite regardless of any opinions or "consciences" they may have as to the nature of the disease. The protective value of vaccination is quite as fixed a fact as is the contagious nature of smallpox. People may entertain any metaphysical opinion they like as to the ultimate nature of reality, but it is with immediate facts, not with ultimate noumena, that practical conduct has to do. It is an immediate fact that smallpox is a contagious disease, dangerous to an unvaccinated community and not dangerous to a vaccinated one.

It is also true that in a generally vaccinated community, an individual unvaccinated person, selfishly hiding behind the vaccination of the others, is reasonably safe. But it is likewise true that any such exception is an antisocial and therefore immoral act. If the antivaccinationists could convert the whole community, they would thereby make the life of that community unsafe. It is only safe because they are few. And, being few, and alleging their "conscientious" objections on a matter which has nothing to do with conscience, but has a great deal to do with the physical safety of human life, they ought to be required, on this as on all other questions of the sort, to yield to the majority which deals with facts as facts. We do not exempt "conscientious" objectors from paying taxes or complying with the plumbing ordinances. Neither should we from vaccination.—Fresno *Republican.*

REPORT OF THE BUREAU OF ADMINISTRATION FOR JANUARY, 1919.

W. H. KELLOGG, M.D., Director.

ACTIVITIES OF THE STATE DISTRICT HEALTH OFFICERS.

North Coast District.

ALLEN F. GILLIHAN, M.D., State District Health Officer, Santa Rosa.

Dr. Gillihan spent the month in the Sacramento office where he was engaged in studies of the influenza outbreak.

Northern District.

HAROLD F. GRAY, Gr.P.H., State District Health Officer, Chico.

Mr. Gray spent the greater part of January in an investigation of malaria at Anderson-Cottonwood Irrigation District. He also visited Redding, Sacramento, Roseville and Berkeley.

Central District.

RALPH W. NAUSS, M.D., State District Health Officer, Fresno.

During January Dr. Nauss visited the following cities in his district: Madera, Merced, Turlock, Modesto, Stockton and Visalia. He also spent a few days at the office in Sacramento and the laboratory at Berkeley.

Southern and South Coast District.

Dr. GAVIN J. TELFER, State District Health Officer,

210 Union League Building, Los Angeles.

During January Dr. Telfer visited the following cities in his district: El Segundo, Banning, Beaumont, Colton, San Bernardino, Pasadena, Riverside, Venice, Long Beach. He also made a special investigation into influenza at Simi in Ventura County and typhoid at Lamanda Park, Los Angeles County.

MORBIDITY FOR JANUARY, 1919, By Weeks.

	Weeks ending					Total Jan. 1919	Total Jan. 1918
	Jan. 4	Jan. 11	Jan. 18	Jan. 25	Feb. 1		
Anthrax							4
Beri-beri							
Cerebrospinal meningitis	1	2	3	3	5	14	27
Chickenpox	2	13	10	12	25	62	856
Cholera, Asiatic							
Dengue							
Diphtheria	36	35	50	37	50	208	354
Dysentery				1		1	2
Erysipelas	9	1	12	2	11	35	61
German measles				9	3	12	926
Glanders							
Gonococcus infection	32	70	45	36	98	281	231
Hookworm							11
Leprosy					1	1	5
Malaria		1		3		4	21
Measles	17	15	14	12	23	81	2,568
Mumps	29	62	32	76	28	227	483
Ophthalmia neonatorum							2
Paratyphoid							1
Pellagra				1		1	2
Plague							
Pneumonia	141	160	185	145	69	700	440
Poliomyelitis				2		2	10
Rabies							
Rocky Mountain spotted fever							
Scarlet fever	47	42	26	62	41	218	566
Smallpox	17	21	20	27	24	109	42
Syphilis	53	50	33	38	56	230	239
Tetanus							2
Trachoma			1	1		2	11
Trichinosis							1
Tuberculosis	144	114	111	118	169	656	658
Typhoid fever	4	8	10	4	7	33	81
Typhus fever							
Whooping cough		7	5	5	3	20	471
Yellow fever							
Totals	532	601	557	594	613	2,897	8,075
Influenza	11,699	21,121	19,024	9,067	3,548	64,459	

SANITARY INSPECTIONS.

EDWARD T. ROSS, Sanitary Inspector.

During the first two weeks in January investigations were made of a number of complaints relative to insanitary conditions in various localities. Reinspections were made of mscellaneous premises in Rodeo, Oakland, San Francisco, South San Francisco, Menlo Park, Mayfield, Santa Clara and San Jose. As a result of this work over sixty public nuisances were abated. Reinspections were also made of twenty-two roadhouses and saloons in Sacramento County. The owners of these places have installed facilities for the sterilization of glassware and have complied with all other recommendations. The latter part of the month was taken up with legislative matters.

Summary of Operations.

Miscellaneous complaints investigated	10
Miscellaneous premises inspected	24
Miscellaneous premises reinspected	20
Food supply places, eating houses, etc., reinspected	32
Hotels and rooming houses reinspected	25
Saloons reinspected	27
Roadhouses reinspected	22
Canneries reinspected	5
Hog ranches and reduction works reinspected	6
Public schools reinspected	5
River and ferry steamers reinspected	6
Nuisances abated	90
Sanitary surveys (cities)	1
Sanitary reports submitted	10

REPORT OF THE BUREAU OF COMMUNICABLE DISEASES FOR JANUARY, 1919.

FRANK L. KELLY, M.D., Gr. P.H., Director.

THE WORK OF THE DIAGNOSTIC LABORATORY OF THE BUREAU OF COMMUNICABLE DISEASES.

The Bureau of Communicable Diseases originated in the Department of Hygiene of the University of California in 1905 as the Hygienic Laboratory. From the first, the work of the laboratory has been the confirmation by bacteriology of the diagnoses of communicable diseases, and by this time the work should have reached a high degree of efficiency. While this work has increased greatly, and while new examinations and tests have been added from time to time, the laboratory still does not serve as large a proportion of the physicians of the state as it should. There are many reasons for this, and it will be the endeavor of this paper to point out a few of them, with the hope of improving the usefulness of the laboratory.

One of the chief difficulties the physicians have in sending material to the laboratory is the procuring of proper containers. Infectious material is only allowed in the mails when shipped in containers of a type approved by the postal authorities. The State Board of Health furnishes such containers free of charge. The difficulty consists in making them available to the physician. When the laboratory was first started these containers were sent direct to physicians. Later it was thought that the service would be improved by sending the containers to local drug stores from which they could be obtained by physicians. Both systems had their drawbacks. Under the original plan a physician would often want a container only to find that his supply had given out. Under the depository system all went well if the depository kept up its stock and if all of the physicians were on speaking terms with the proprietor. But these two "ifs" seemed almost insurmountable difficulties. Either the proprietor of the drug store took little interest in this part of his business and let his stock run down, or half of the physicians in the town would not set foot in his store under any consideration. With the hope of making it easier to procure containers we have now combined the two systems. Containers are sent direct to physicians at their request and we also endeavor to see that the depositories are kept well supplied. By doing this we feel that physicians will have no excuse for violating the postal regulations and endangering the health of persons handling specimens shipped in pasteboard boxes, newspaper wrappings, etc. We are accordingly sending out the following notice to a physician who sends us a specimen in an unapproved container: "The specimen for this examination was received in a container that does not conform with postal regulations. In the future please use state containers. If these can not be obtained from our depository in your city we will be glad to keep you supplied, on your request, direct from this laboratory." This notice is sent when the first specimen is received in poor condition; the second time the physician will be reported to the postal authorities as knowingly violating the regulations, and the third time the laboratory will refuse to

examine specimens sent in by this physician. In each instance we reserve the right to discard the specimen, as is done in all state laboratories. This may seem rather drastic action, but as the work of the laboratory increases, and particularly the work with highly infectious material, such as feces from typhoid and dysentery patients, it seems necessary in order to protect the health of persons handling such specimens.

Another constant source of friction between the physician and the laboratory is the failure of the former to collect the specimen in the proper manner. Directions for collecting each specimen accompany each of our diagnostic outfits, but either the physician fails to read them or thinks that it is not necessary to follow them. On this account the results of many examinations are not as accurate as they should be and some specimens have to be discarded altogether. An instance of this neglect on the part of physicians and health officers was recently brought forcibly to our attention. Several months ago we endeavored to improve our service on diphtheria examinations by sending out culture media along with the swabs. Directions accompanying these outfits explicitly stated to inoculate the tube of media and destroy the swabs. Ninety per cent of the specimens sent in to the laboratory had the swabs stuck in the tube of media which was so broken that an examination was useless. In fact, this outfit proved so unsatisfactory that we abandoned it and have gone back to the old swab outfit. Many other examples could be cited, such as dogs' heads improperly packed which are received in such a stage of decomposition that when the skull is opened the brain has to be taken out with a spoon, blood smears for malaria so thick that a high-powered electric light will not drive through sufficient light to examine them by, bottles of feces filled so full that the cork has been forced out, all of which would have been avoided had the sender spent one or two minutes in reading the printed directions.

A third cause of trouble is the failure of the physician to properly fill out the card accompanying the specimen. Some of the cards received have not the patient's name or identifying number, others lack the physician's name or address, some are entirely blank, and many, many others are so illegible that it takes several of the staff and the physicians' directory to make out the name of the sender. All of this causes considerable delay and often reports are missent or not sent at all on this account.

And now for the physicians' troubles. Occasionally they complain that they do not receive reports within a reasonable time.

The system of checking specimens after their receipt at the laboratory assures their examination and reporting in the shortest time necessary for the proper examination. The cards accompanying all specimens are stamped with the date of receipt and again stamped and initialed by the person who sends the report. These cards are kept on file and show the actual time between receiving the specimen and sending the report. There are often unavoidable delays in transmission of the mails, both to and from the laboratory, particularly at the present time. If the physicians would fill out the cards with the date of taking the specimen it would greatly facilitate tracing the delay. They should also ascertain the time of closing the mails so that specimens will not be held over in the office where they are mailed.

Sometimes when the report is sent the physician that the specimen was too small in amount (for instance, blood for the Wassermann and Widal tests) he replies that a commercial laboratory could have made the examination. Only one answer can be given to this, and that is that we do not ask for any more of a specimen than is required for the proper examination by the technic used in our laboratory. In fact, we ask for much less blood for the two tests just mentioned than is given by Hasseltine of the U. S. P. H. S. as sufficient amounts, for he says 5 cc. is sufficient for the Widal test and 10 cc. for the Wassermann.

Once in a while, I am glad to say it is very, very seldom, the physician questions the report sent to him. This is because he fails to realize that the laboratory report is based solely upon the laboratory examination and that if negative it does not mean the absence of the suspected disease, but merely that evidence of it was not found in that specimen. The technic employed for each examination has been selected because we feel that it is the one yielding the greatest number of accurate results. Let me quote from a bulletin of the Rhode Island State Laboratory: *"Do not condemn laboratory findings if they prove contrary to your expectations. The laboratory opinion is based on the evidence submitted."*

In closing I wish to state that the bureau will always be glad to receive suggestions for the betterment of its service.

DIVISION OF BIOLOGICAL EXAMINATIONS.

Summary of Examinations Made in the California State Hygienic Laboratory During the Month of January, 1919.

Condition suspected	Positive	Negative	Inconclusive	Total
Main Laboratory at Berkeley—				
Anthrax	----------	2	----------	2
Diphtheria (diagnosis)	12	23	*2 4	39
Diphtheria (release)	2	26	*5 6	34
Gonococcus infection	12	15	9	36
Malaria	----------	3	----------	3
Meningitis	----------	2	----------	2
Pneumococcus	2	3	----------	5
Rabies	3	1	----------	4
Typhoid (Widal)	1	8	1	10
Tuberculosis	15	50	----------	65
Syphilis (Wassermann)	38	167	19	224
Phenol coefficient, four tests, three begun in November and now completed, and one received in January and now begun	----------	----------	----------	4
				428
Southern Branch at Los Angeles—				
Diphtheria (diagnosis)	17	53	*4	74
Diphtheria (release)	45	53	*2 3	101
Gonococcus infection	21	32	3	56
Rabies	1	----------	----------	1
Typhoid feces	----------	6	†1	7
Typhoid (Widal)	4	9	1	14
Tuberculosis	12	33	----------	45
				298
Northern Branch at Sacramento—				
Diphtheria (diagnosis)	1	3	----------	4
Diphtheria (release)	----------	1	----------	1
Gonococcus infection	1	----------	----------	1
Malaria	----------	2	----------	2
Typhoid (Widal)	----------	2	----------	2
Tuberculosis	3	2	----------	5
				15
Total	----------	----------	----------	741

*No growth. †Incomplete.

DIVISION OF EPIDEMIOLOGICAL INVESTIGATION.

Epidemiological Investigations, and Other Special Investigations, During the Month of January, 1919.

Main Laboratory at Berkeley—
An investigation of influenza in San Jose.
An investigation of influenza in Richmond.

DIVISION OF PREVENTIVE THERAPEUTICS.

Pasteur Treatments for the Prevention of Rabies by the State Hygienic Laboratory, During the Month of January, 1919.

	Treatment commenced	Treatment completed
Main Laboratory at Berkeley	0	0
Northern Branch at Sacramento	0	0
Southern Branch at Los Angeles	0	0
Laboratory of Sacramento Board of Health, by deputized bacteriologist	0	0
Laboratory of San Francisco Board of Health, by deputized bacteriologist	0	0
Laboratory of Los Angeles Board of Health, by deputized bacteriologist	0	0
Laboratory of San Diego City Board of Health, by deputized bacteriologist	0	0
Laboratory of Letterman General Hospital, Presidio, by deputized bacteriologist	0	0
Laboratory of United States Naval Hospital, Mare Island, by deputized bacteriologist	0	0

Vaccine Issued by the State Hygienic Laboratory During the Month of January, 1919.

Typhoid vaccine—
- Number of physicians to whom vaccine was sent: 0
- Number of complete treatments sent: 0

Mixed typhoid paratyphoid vaccine—
- Number of physicians to whom vaccine was sent: 2
- Number of complete treatments sent: 67

Influenza vaccine—
- Number of physicians to whom vaccine was sent: 1
- Number of complete treatments sent: 15

Ophthalmia Neonatorum Prophylactic Outfits Distributed During the Month of January, 1919.

Number of outfits, containing two ampules each, issued: 262

PUBLIC HEALTH INSTRUCTION.

Participation in Instruction in Public Health During January, 1919.

Main Laboratory at Berkeley—
- Bacteriological instruction outfits sent out: 2
- Bacteriological instruction outfits in use: 22

DIVISION OF PARASITOLOGY.

WILLIAM W. CORT, Ph.D., Consulting Helminthologist.

Almost all of the examinations reported for this month were made from Orientals in the Delta region. It is significant to note the presence of cyst carriers of Entamœba histolytica, the organism of amœbic dysentary and of Giardia intestinalis, which produces a type of flagellate dysentery. The number of examinations for intestinal protozoa is not yet sufficient to make it possible to draw conclusions in regard to the prevalence of these organisms. Recent work on amœbic dysentery shows that to be sure of a diagnosis for cyst carriers six different examinations are necessary, using three covers at each examination. Since it was possible for us to make but one examination for each individual and only one cover was examined, it would seem likely that only a part of the actual carriers even among the small number of individuals examined were detected.

During the month Mr. Bachmann of the Bureau of Sanitary Engineering visited the Josephine to work on plans for a model water purifying system to be installed for demonstration purposes. One of the most important health problems of the Delta is the improvement of the water supply for drinking and domestic purposes. Very much of the water is taken directly from the river or canals and used without any attempt at purification. It is hoped that the installation on the Josephine of a simple type of water purification plant will improve this condition.

Summary of Examinations Made in the Laboratory of Parasitology of the State Board of Health During the Month of January, 1919.

	Positive	Negative	Total
Examinations for intestinal worms—			
Miscellaneous	----------	65	65
Trichuris trichiura	17	----------	17
Hookworm	4	----------	4
Clonorchis sinensis	3	----------	3
Trichostrongylus orientalis	2	----------	2
Hymenolepis nana	1	----------	1
Examinations for intestinal protozoa—			
Miscellaneous	----------	35	35
Entamœba histolytica	3	----------	3
Entamœba coli	2	----------	2
Giardia intestinalis	2	----------	2
Totals	34	100	134

REPORT OF THE BUREAU OF TUBERCULOSIS FOR JANUARY, 1919.

E. L. M. TATE-THOMPSON, Director.

The bureau plans to stop migration of subsidized patients. As rapidly as new sanatoria are completed, a complete card index is kept, with not only the patient's name, but other data, so that patients traveling in an adjoining county are returned to the county where they have sworn they resided a year previously. This enables each county to collect for these men.

Recently we had a good example in the San Francisco Tuberculosis Hospital. A patient from the Sacramento Hospital entered the San Francisco hospital twice within a period of five or six months, claiming residence in San Francisco, and then later returning to Sacramento. When the matter was taken up with the patient he made a vigorous protest at being returned; he was taken in the ambulance and put on board a Sacramento boat and the ambulance met him at Sacramento.

The days of the old type of county hospital patient are passing. Men who formerly made a lodging house out of a county hospital, do not care for hospital treatment as it is given now. Whiskey having been eliminated as a reward for work, frequent baths, night clothes and clean beds have made a change, so that the casual laborer, who formerly tramped from county to county, where as Kipling has so aptly put it, "Every bloomin' campin' ground, exactly like the last," finds a different place than counted on. Nearly every inspection, particularly in smaller counties, finds new faces. Younger men and women, in whom the county can invest their money in health the same as if it were a public school, are now seen.

At the present time millions are being planned for public health expenditure in the reconstruction program in every country in Europe. England is already planning on an even greater extension of their Health Insurance Law. Serbia, France, Italy, China and Palestine also have various commissions working to make their citizens 100 per cent better physically, and all that of course means in the end that tuberculosis is bound to diminish.

France is to save her children at any price, and she should; but curiously enough, one Saturday this month I sat talking to the superintendent of the City and County Hospital in San Francisco trying to evolve some plan whereby we might find a place for the children in San Francisco who will respond to preventorium care before it is too late, when a kindly disposed woman, at least I credit her with good intentions, interrupted us, asking us to buy some tickets for a table cover she was going to raffle for the sick children in France. I protested, reminding her that the Red Cross is doing a tremendous lot for those children, but she

said: "These are for children with tuberculosis." I reminded her again of the far-reaching work of the Rockefeller Foundation, but she was still persistent, and I finally said: "Is it only a coincidence that Dr. Broderick and I were just now trying to work out a plan for the sick children in San Francisco, whom the war has touched? Why don't you sell your table cover for them?" but she moved on. It is because of the urgent need for a bureau to reach the child of pre-school age, whom our nurses do not have a chance to see, that this bureau is lending its support to the Child Hygiene Bill. America must begin to clean up her own back yard as far as public health is concerned.

Hospitals Inspected.

Sacramento—Sylmar, San Francisco.

San Francisco site near Los Gatos, The Oaks, Pleasant View (Christian Scientists) La Vina, San Gabriel and the Barlow Sanatorium.

REPORT OF THE BUREAU OF SOCIAL HYGIENE FOR JANUARY, 1919.

LEWIS MICHELSON, M.D., Director.

Arsenobenzol Distributed by the Bureau During January, 1919.

Los Angeles Health Department	150
San Francisco Health Department	150
Los Angeles County Hospital	100
San Bernardino County Hospital	50
Kern County Hospital	50
San Diego County Clinic	50
Los Angeles Medical Dept., U. of C., Los Angeles	31
Boyle Heights Dispensary, Los Angeles	24
San Francisco Polyclinic	10
Oakland College of Medicine and Surgery	6
Oakland Health Department	1
	622

Treatment reports received—		
120	patients received one dose	120
58	patients received two doses	116
39	patients received three doses	117
17	patients received four doses	68
14	patients received five doses	60
2	patients received six doses	12
3	patients received seven doses	21
1	patient received eight doses	8
1	patient received nine doses	9
255		531
	Ampoules wasted	7
		538

Other occupations	104
Housewives	72
Laborers	41
No occupation	21
Students	13
Prostitutes	4
	255

Females	132
Males	123
	255

Patients treated—		
San Bernardino County Hospital		35
Los Angeles County Hospital		31
San Francisco Isolation Hospital		31
Stanford University Clinics, San Francisco		27
Los Feliz Hospital, Los Angeles		24
Temple Block Clinic, Los Angeles		24
Kern County Hospital		22
Mission Valley Hospital		15
Sacramento Isolation Hospital		9
Boyle Avenue Dispensary		6
Los Angeles East Side Jail		5
Santa Barbara Cottage Hospital		5
San Francisco Polyclinic		4
Pasadena Dispensary		3
Fresno County Hospital		3
Oakland College of Medicine and Surgery		2
Stanislaus County Hospital		2
San Francisco Hospital		1
Monterey County Hospital		1
Baby Hospital, Oakland		1
Tulare County Hospital		1
Tehama County Hospital		1
Shasta County Hospital		1
San Mateo County Hospital		1
		255
Total number of arsenobenzol ampoules distributed		6,335
Total number of treatment cards received	5,119	
Total number of treatment cards distributed and not returned	1,216	
		6,335

REPORT OF THE BUREAU OF VITAL STATISTICS.

GEORGE D. LESLIE, Director.

Classification of Deaths from Influenza and Pneumonia.

Altogether 15,544 deaths from influenza and pneumonia (all forms) were reported for California for the last quarter of 1918, the monthly totals being as follows: October, 5,381; November, 6,505; and December, 3,658. The quarterly aggregate included 13,121 deaths from influenza and 2,423 from pneumonia (all forms).

The 15,544 deaths from influenza and pneumonia comprised 9,900 males, or 63.7 per cent, as compared with only 5,644 females, or 36.3 per cent. Altogether 14,550, or 93.6 per cent of all, were Caucasians, with only 570 Japanese, 158 Negroes, 151 Chinese, and 115 Indians. The 14,550 of the white race were distributed by nativity as follows: California, 4,723, or 32.5 per cent; other states. 4,496, or 30.9 per cent; foreign countries, 4,834, or 33.2 per cent; and unknown, 497, or 3.4 per cent.

It is a notable fact that deaths from influenza and pneumonia occur largely among persons in the twenties and thirties. Of the whole 15,544 deaths from these diseases reported for the final quarter of 1918, no less than 4,976, or 32.0 per cent, were at 30 to 39 years, with as many as 4,430, or 28.5 per cent, at 20 to 29 years. Thus 9,406 deaths, or three-fifths of all (60.5 per cent), occurred at 20 to 39 years.

The age distribution of other deaths from influenza and pneumonia in the last quarter of 1918 was as follows: 40 to 49 years, 1,726; 10 to 19 years, 1,175; 1 to 4 years, 850; 50 to 59 years, 680; under 1 year, 556; 60 to 69 years, 427; 70 years and over, 398; and 5 to 9 years, 326.

Births, Deaths and Marriages for December.

State, Totals and Annual Rates. The following table shows for California as a whole, the birth, death and marriage totals for the current month of the year to date in comparison with corresponding figures for last year, as well as the annual rates per 1,000 population represented by the totals for the current month and the year to date. The rates are based on an estimated midyear population of 3,129,584 for California in 1918, the estimate having been made by the United States Census Bureau method with slight modifications.

*Birth, Death and Marriage Totals, with Annual Rate per 1,000 Population, for Current Month and Year to Date, for California: December.**

Month or period	Total		Annual rate per 1,000 population, 1918
	1918	1917	
December—			
Births	4,806	5,163	15.5
Deaths	7,374	4,005	27.7
Marriages	2,453	3,866	9.2
January to December—			
Births	55,545	51,741	17.8
Deaths	57,480	42,027	18.4
Marriages	32,487	36,283	10.4

*NOTE.—The present report is for the month preceding but two. This order must be followed, because of the publication of the Bulletin during the early part of the month, before the tabulation of records for the next preceding month is completed.

The above figures show a slight decrease in births for December, 1918, in comparison with the same month for 1917; a large increase in deaths caused by the influenza epidemic, and a considerable decrease in marriages.

In a comparison for the year 1918 with the year 1917 there is shown a moderate increase in births and a marked increase in deaths, through the influenza epidemic, but a decrease in marriages.

Length of Residence. The length of residence in California for the 7.374 decedents in December was as follows: Under 1 year, 701, or 9.5 per cent; 1 to 9 years, 1,588, or 21.5 per cent; 10 years and over, 2,818, or 38.2 per cent; life, 1,988, or 27.0 per cent; and unknown 279 or 3.8 per cent.

For residents of the 70 cities of 2,500 population in 1910, there were 104 births and 181 deaths, which occurred in registration districts other than the city of residence.

County Marriage Totals. The counties showing the highest marriage totals for the month were as follows: Los Angeles, 578; San Francisco, 472; Alameda, 260; San Diego, 113; Sacramento, 102; Orange, 88; Santa Clara, 81; Fresno. 72; San Bernardino, 63; San Diego, 57; Riverside, 44; Kern, 37; Tulare, 32; and Marin, 30.

County Birth and Death Totals. Exclusive of stillbirths in both cases, the birth and death totals for the month were as follows for the leading counties, arranged in decreasing order of birth registration:

County	Births	Deaths	County	Births	Deaths
Los Angeles	1,082	1,723	Sacramento	133	263
San Francisco	709	1,220	Orange	117	84
Alameda	507	685	Tulare	93	68
Fresno	240	247	Contra Costa	91	104
San Diego	158	464	San Bernardino	91	171
Santa Clara	153	274	Kern	74	118
San Joaquin	146	236	Santa Barbara	67	95
Imperial	134	155	Riverside	64	98

City Birth and Death Totals. Birth and deaths totals, exclusive of stillbirths, are presented similarly for the principal California cities below:

City	Births	Deaths	City	Births	Deaths
Los Angeles	737	1,176	Long Beach	59	67
San Francisco	709	1,220	San Jose	50	64
Oakland	329	377	Pasadena	43	60
San Diego	121	320	Bakersfield	40	67
Sacramento	113	223	Santa Barbara	33	41
Stockton	94	176	Richmond	28	26
Fresno	83	113	Santa Ana	26	26
Berkeley	82	82	Vallejo	25	39

Causes of Death. The following table shows the classification of deaths in California for the current month, in comparison with the preceding month:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths for Current and Preceding Month, for California: December.

Cause of death	Deaths December	Proportion per 1,000	
		December†	November†
All causes	7,374	1,000.0	1,000.0
Typhoid fever	10	1.4	0.8
Malarial fever	2	0.3	0.3
Measles	1	0.1	0.2
Scarlet fever	5	0.7	0.2
Whooping cough	5	0.7	1.7
Diphtheria and croup	22	3.0	1.6
Influenza	*2,999	406.7	583.6
Other epidemic diseases	9	1.2	0.8
Tuberculosis of lungs	507	68.8	47.5
Tuberculosis of other organs	56	7.6	3.7
Syphilis and gonorrhea	31	4.2	2.6
Cancer	262	35.5	27.9
Other general diseases	105	14.2	11.1
Meningitis	22	3.0	1.7
Other diseases of nervous system	430	58.3	39.7
Diseases of circulatory system	866	117.4	64.1
Pneumonia and broncho-pneumonia	659	89.4	82.2
Other diseases of respiratory system	97	13.2	7.7
Diarrhea and enteritis, under 2 years	48	5.6	8.1
Diarrhea and enteritis, 2 years and over	20	2.7	2.8
Other diseases of digestive system	179	24.3	19.6
Bright's disease and nephritis	253	34.3	21.2
Childbirth	24	3.3	2.5
Diseases of early infancy	198	26.9	21.3
Suicide	84	11.4	6.8
Other violence	313	42.5	28.7
All other causes	165	22.4	11.4

*Total for influenza and pneumonia together is 3,658, or proportion of 496.1 per 1,000 total deaths.

†Proportionate distribution affected greatly by exceptionally large number of deaths from influenza and pneumonia.

In December there were 2,999 deaths from influenza and 659 deaths from pneumonia (all forms), or a total of 3,658 from influenza and pneumonia together. The statistics of deaths from the epidemic are presented elsewhere in this bulletin.

Other notable causes of deaths for December were as follows: Diseases of the circulatory system, 866; the various forms of tuberculosis, 563; diseases of the nervous system, 452; violence (including suicides, accidents, etc.) 397; diseases of the nervous system (including Bright's disease and nephritis), 294; and epidemic diseases (except influenza), 54.

The death total from influenza and pneumonia (all forms) for certain cities of the state follows:

Los Angeles	573	Bakersfield	29
San Francisco	544	Alameda	22
Oakland	150	Riverside	22
San Diego	206	Long Beach	21
Pasadena	128	Pasadena	20
Stockton	104	Santa Barbara	20
Fresno	75	San Bernardino	19
Berkeley	39	Vallejo	17
San Jose	30	Marysville	15

The deaths from the four leading epidemic diseases reported for the month (influenza excepted) were distributed by counties as follows:

Diphtheria and croup		Typhoid fever		Scarlet fever	
Alameda	2	Alameda	1	Alameda	2
Contra Costa	1	Los Angeles	3	San Francisco	2
Los Angeles	7	Placer	1	Santa Clara	1
Sacramento	1	Riverside	1		5
San Diego	2	Sacramento	1		
San Francisco	3	San Diego	1		
Santa Barbara	1	Santa Clara	1	Whooping cough	
Santa Clara	1	Siskiyou	1	Fresno	2
Shasta	1		10	Lake	1
Solano	1			Santa Cruz	1
Stanislaus	1			Siskiyou	1
Yolo	1				5
	22				

Sex, Race and Nativity. The proportion of the sexes among the 7,374 decedents in December was: Male, 4,535, or 61.5 per cent; and female, 2,839, or 38.5 per cent.

The race distribution of decedents was: White, 6,862, or 93.1 per cent; Japanese, 242; Chinese, 134; Negro, 89; and Indian, 47.

The 6,862 white decedents were classified by nativity as follows: California, 1,847, or 26.9 per cent; other states, 2,659, or 38.7 per cent; foreign born, 2,139, or 31.2 per cent; and unknown, 217, or 3.2 per cent.

Infant Mortality. There were 451 deaths for children under 1 year, which were distributed by age in months as follows: Under 1 month, 223, or 49.4 per cent; 1 to 2 months, 69, or 15.3 per cent; 3 to 5 months, 67, or 14.9 per cent; and 6 to 11 months, 92, or 20.4 per cent.

In certain cities the deaths under 1 year were as follows: San Francisco, 34; Los Angeles, 33; and Oakland, 18.

The 451 deaths under 1 year, in comparison with the 4,806 live births reported for the month, show an infant mortality ratio of 94 per 1,000.

For the same month last year there were 339 deaths under 1 year of age, which, compared with the 5,162 live births reported, made an infant mortality ratio of 66 per 1,000 births.

REPORT OF THE BUREAU OF SANITARY ENGINEERING FOR JANUARY, 1919.

By C. G. GILLESPIE, C.E., Director.

SEWAGE DISPOSAL.

Applications for Permit Filed.

Stanford, Leland Stanford, Jr., University. To construct 4-inch sewer from the Hopkins Marin Station, to empty into Monterey Bay between New Monterey and Pacific Grove.

Permits Granted—None.

Plans Filed.

Springville, Kings County and Tulare County Tubercular Hospital. Final plans for sewerage and sewage disposal.

Turlock. Plans for proposed sewage treatment plant.

Investigations, Inspections, Reports and Conferences.

Stockton. January 30. Inspected Riensch-Wurl screen plant, nearing completion. This will handle sewage of North Stockton. After screening and disinfection, disposal will be into San Joaquin River.

Orange County. January 14. The cities of Fullerton, Anaheim, Orange and Santa Ana have appointed a board of five engineers to investigate the feasibility of an inter-city outfall sewer to the ocean, which would do away with four municipally owned sewer farms that have been a source of more or less complaint. It is planned also to ask the present legislature to pass a bill making possible the financing of such a project. The sewer, if built, will have a length of about 18 miles and probably will discharge at a point about 2½ miles west of Newport Beach pier. It is likely that farmers along the outfall would use a large part of the sewage for irrigation at certain periods. The investigation has not yet gone far enough to afford much definite information.

Santa Monica. January 15–23. Collection of a series of samples from the ocean at Santa Monica has been begun in an effort to determine the danger to bathers from sewage. The sewage is passed through an electrolytic plant which apparently is of no value in reducing bacteria or otherwise changing its character. The effluent is discharged into the ocean at end of a pier 1,500 feet from shore. Two sets of samples thus far collected, one at low and the other at high tide, show very high bacterial counts near end of pier but very low counts on the beach.

Pasadena. January 24. Reinspection of experimental activated sludge plant. It was out of operation, as it has been much of the time in the past two months, while changes in construction have been under way.

Redondo. January 23. Municipal septic tank, built in 1908, has never been cleaned and is now filled with solids. It is built beneath a street and covered with heavy arched concrete roof. Its interior is cut up with numerous concrete baffle walls. Cleaning is to be attempted by breaking up solids with fire streams and removing with centrifugal pumps. A pipe about 500 feet long will be laid to carry the sludge to the ocean. The effluent of this tank is pumped against 200 feet head to a city farm two miles distant.

Avalon. Prepared tentative plans for coarse-bar screening plant for municipal sewage.

WATER SUPPLIES.

Applications for Permit Filed.

Pomona, Consolidated Water Company. Application for permit to continue to supply water from wells and tunnels.

Permits Granted—None.

Plans Filed—None.

Roseville, Roseville Water Company. January 16. Conferred with superintendent regarding construction of a new concrete hypochlorite disinfection plant to replace a crude emergency affair now in use. Water to be treated is ditch water, carried from the high Sierras and subject to sidehill and road flushings in a large farming district, and to pollution by ditch tenders and cleaners.

Sacramento. January 16. Attended a joint meeting of Retail Merchants' Association and Chamber of Commerce considering plans for a new water supply. Filtration of the Sacramento, "mountain" water, well water, river galleries, etc., were discussed.

Pinole, Hercules Water Company. January 28. Inspected hypochlorite plant treating Pinole Creek water for fire and cooling purposes. Solutions were not being carefully prepared and bulk of the powder settled to the bottom where it went into solution slowly, requiring days. Advised more careful agitation and training the operator to test the strength of the solution for available chlorine.

Pittsburg, Black Diamond Water Company. January 28. Supply from San Joaquin River running high in turbidity, and filter attendants could not remove it. Spent three days on plant, adjusting chemical feed to handle the water fairly

successfully. Changed plant from lime to soda ash for ease of operation and "broke in" a new operator.

Antioch. January 28. Supply similar to that at Pittsburg, but good results being obtained due to better operation of filters, use of adequate filter alum and fine-grained sand.

Sonora. January 29. Sampled Phœnix Lake in several places to determine its effectiveness in improving the supply. Found no improvement.

Orwood. January 29-30. Tested barrel treatment of San Joaquin River, using filter alum and soda ash and settling, for use on State Board of Health houseboat "Josephine." Obtained excellent clarification and bacterial efficiency, using 10 grains per gallon of filter alum and 5 grains per gallon of soda ash. Plans are to set up a working plant for demonstration purposes.

Calexico. Prepared suggestive plans for remodeling water sedimentation basins.

SWIMMING POOLS.

Application for Permit Filed.

San Francisco, Young Women's Christian Association. To use swimming pool and baths, 620 Sutter street, San Francisco.

Permit Granted.

Pending personal investigation, temporary permit has been granted to the above named applicant.

LABORATORY WORK.

The following is a summary of the work done by the laboratories of the Bureau of Sanitary Engineering for January, 1919.

Los Angeles Office—	
Bacteriological examinations of water	78
Berkeley Office—	
Bacteriological examinations of water	242
Bacteriological examinations of sewage	5
Chemical examinations of water (partial)	244
Sanitary chemical analyses of water	9
Total samples submitted	258

REPORT OF THE BUREAU OF FOODS AND DRUGS FOR JANUARY, 1919.

E. J. Lea, M.S., Director.

Two hundred and three samples were received at the laboratory during the month of January.

The official samples of foods and drugs, ninety-two in number, consisted of condiments, egg meats, egg substitutes, extract of lemon, fish, flour, fruit, liquors, meats, milk, molasses, noodles, olives, prunes, vegetables and vinegar; argyrol solution, camphorated oil, capsules, mineral wonder, lysol, potassium iodide and sweet spirits of nitre.

The unofficial samples of foods consisted of condiments, feed, flour, fruit, meat, milk, nuts, prunes, syrup and vegetables.

The state institution samples consisted of cereals, cheese, coffee, extracts, flour, fruit, jelly, oleomargarine, oysters, salt, sardines, spice, syrup, tea and vegetables.

CONVICTIONS REPORTED DURING JANUARY FOR VIOLATIONS OF THE PURE FOODS AND DRUGS ACT.

Los Angeles—H. B. Boddington, fined $25 for mislabeled Custocreme, and fined $50 for mislabeled and adulterated Nucake; Narton Remedy Corporation, fined $25 for mislabeled Eczemox. *Oakland*—C. Martens, fined $5 for selling stale, decomposed eggs as fresh; Lekos Brothers, fined $5 for same offense; J. Nylander, fined $10 for same offense; A. Levit, fined $5 for same offense; Landregan & White, fined $5 for selling mislabeled and adulterated gin; Pacific Coast Canning Co., fined $300 for mislabeled and adulterated tomato puree; Hi Fung, fined $5 for mislabeled and adulterated whiskey. *Niles*—Schuckl & Company, fined $25 for mislabeled and adulterated standard tomatoes with puree. *San Francisco*—Gilt Edge Packing Co., found guilty and placed on O. R. for six months, for packing and selling mislabeled and adulterated catsup; A1 Grocery, found guilty and placed on O. R. for sixty days for selling stale and decomposed eggs for fresh. The following fines were also imposed for the sale of stale, decomposed eggs: J. Kump, Jr., fined $20; Quong Hop Shing Co. fined $5; Suey Lee fined $5; Sam Hing Co. fined $5; Sang Hop fined $10; K. H. Hop Kee fined $20; Swift & Company fined $5; J. Milonas fined $5; California Canneries Company fined $50, for packing mislabeled and adulterated tomato sauce. *Santa Rosa*—John Brendel, fined $25, for selling mislabeled and adulterated gin.

MATERIAL CONDEMNED AS UNFIT FOR FOOD, JANUARY, 1919.

During this month the inspectors have denatured and destroyed the following food materials which, upon examination by the laboratory, were found to be unfit for food purposes: Apples, evaporated—200 pounds, wormy, San Jose; canned crab—858 pounds, decomposed, San Francisco; fava beans—61,820 pounds, wormy, San Francisco and Pescadero; olives—23 gallons, decomposed, San Francisco; prunes—40 pounds, rain-damaged, San Francisco; syrup—435 gallons, adulterated, San Francisco; tomato puree—3,138 pounds, fermented, Los Angeles; tomato puree—52,529 pounds, adulterated, Sonoma; tomato sauce—400 8-oz. tins, moldy material, Sonoma.

MATERIAL IN COLD STORAGE JANUARY 1, 1919.

Beer	1,754 bbls.	Fruit, Dried—	
Butter	429,211 lbs.	Figs	1,100 lbs.
Catsup	305 bbls.	Miscellaneous	321,822 lbs.
Cereals	3,201 lbs.	Peaches	570 lbs.
Cheese	1,455,793 lbs.	Prunes	100 lbs.
Cider	1,509 bbls.	Raisins	20,595 lbs.
Eggs—		Fruit, Fresh—	
Fresh	371,310 doz.	Apples	30,431,659 lbs.
Frozen	284,792 lbs.	Berries	729,458 lbs.
Fish—		Cranberries	6,482 lbs.
Dried	240,015 lbs.	Crushed	1,200 lbs.
Fresh	181,367 lbs.	Grapes	21,108 lbs.
In brine	860,845 lbs.	Grapefruit	100 lbs.
Miscellaneous	136,405 lbs.	Miscellaneous	9,305,743 lbs.
Shell	21,910 lbs.	Peaches	200 lbs.

Fruits, Fresh—		Olive oil	35 bbls.
Pears	231,978 lbs.	Pickles	9,200 lbs.
Persimmons	11,735 lbs.	Plants	261 boxes
Plums	98 lbs.	Plant leaves	210 lbs.
Pomegranates	6 lbs.	Poultry—	
Oranges and lemons	50,061 lbs.	Chickens	101,935 lbs
Fruit juice	330,360 lbs.	Ducks	112 pkgs.
Lard	239,828 lbs.	Game	12 lbs.
Meat, Cured—		Miscellaneous	1,548,346 lbs.
Ham and bacon	110,510 lbs.	Pigeon	25 lbs.
Meat, Frozen—		Turkey	101,106 lbs.
Beef	3,440 lbs.	Rice	687,645 lbs.
Pork	2,350 lbs.	Syrup	386 bbls.
Meat, Fresh—		Trees	11 bbls.
Beef	6,526 lbs.	Vegetables—	
Buffalo	620 lbs.	Beans	5,708 lbs.
Miscellaneous	3,059,696 lbs.	Cabbage	5,291 lbs.
Pork	17,271 lbs.	Celery	91,400 lbs.
Rabbit	53 lbs.	Chili peppers	49,764 lbs.
Veal	4,681 lbs.	Horseradish	100,240 lbs.
Mince meat	1,200 lbs.	Miscellaneous	6,502 lbs.
Milk, condensed	51,000 lbs. / 5,343 cases	Mushrooms	9,455 lbs.
Miscellaneous materials	683,789 lbs.	Onions	14,042,812 lbs.
Nuts	359,166 lbs.	Potatoes	14,269,826 lbs.
Nutmeats	186,513 lbs.	Sauerkraut	1,220 lbs.
Oleomargarine	97,992 lbs.	Wine	4 bbls.
		Yeast	3,088 lbs.

CASES REFERRED TO DISTRICT ATTORNEYS.

Los Angeles—Sam Seelig Co., Inc., chocolate; Narton Remedy Company, Eczemox; Yosemite Wine Company, port wine. *Oakland*—S. Herman (guarantor), eggs; A. Levit, eggs; M. Kessler, eggs; McNamee & Nylander, eggs; N. Brophy, eggs; Armour & Company, eggs; Acropolis Confectionery, ice cream; Superior Ice Cream Company, ice cream; The Jaffe Wine Company, whiskey. *San Francisco*—John Milona, eggs; Bennett & King (guarantor), eggs; C. F. Voorhees, eggs; J. Kump, eggs; H. C. Long Syrup Company, cane and corn syrup; California Canneries Company, tomato sauce. *San Jose*—Mead's, Inc., milk.

THE TOWLE MAPLE PRODUCTS COMPANY VS. STATE BOARD OF HEALTH.

The State Board of Health, Bureau of Foods and Drugs, proceeded under the pure food law against the Towle Maple Products Company on the charge of mislabeling Towle's Log Cabin Syrup, Granulated Sugar and Maple Sugar, for the reason that the said syrup contained only 10 per cent, or less, of maple sugar. This amount was not sufficient to justify the name of "Granulated and Maple Sugar," but should have been labeled "Granulated Sugar Syrup Maple Flavored," as stated in Food Inspection Decision 75, Bureau of Chemistry, United States Department of Agriculture.

Furthermore, the said syrup either contained a very low grade maple product, or it was artificially colored with caramel. Practically all of the other mixtures of cane and maple syrups which have been found in this state contained from one-third to one-half of maple syrup.

The Towle Maple Products Company brought action in the Federal Court restraining the State Board of Health from seizing stocks of the said syrup in this state. The case came on for hearing and a decree was signed by stipulation on both sides to the effect that the State Board of Health was enjoined from seizing the said syrup in the hands of importers only.

The Bureau of Foods and Drugs will make further investigations of this syrup in the hands of the retailers, and if found of the same quality as the stocks in the hands of the wholesalers, action will be taken under the California Pure Food Act against retailers.

REPORT OF THE BUREAU OF REGISTRATION OF NURSES FOR JANUARY, 1919.

KATE S. DOUGLASS, Assistant Inspector of Schools of Nursing.

Inasmuch as influenza conditions have been improving, inspection of schools of nursing throughout California has been made possible again. We find that all schools are facing a difficult problem in their effort to fulfill their educational function.

High schools throughout the state have been closed for a varying period, some still not being open for classes. This has been a serious handicap for our nursing schools, as almost without exception pupil nurses were having their class work in chemistry and nutrition and cookery there, also in some cases class work in biology and physiology was being given to nursing students.

Need of Nurses.

The recent epidemic has again emphasized our lack of nurses, as during this time it was found to be almost impossible to secure more than a limited and inadequate number of trained nurses and attendants. It has been simply impossible to meet requirements, and whole families have died that might have been saved had there been adequate nursing facilities. The casualty list of the epidemic of influenza, though incomplete, has brought home to us with grievous force the fact that in many, possibly hundreds, of communities in the United States, there are no nursing resources. Skilled professional nursing should be available to every, even the most remote, part of our country. This can only be secured through public health nurses.

What the National Organization for Public Health Nursing Is Doing to Help.

The National Organization for Public Health Nursing voted at its recent meeting in Chicago to raise a considerable fund of money reaching to $100,000 or more, if possible, to provide scholarships for nurses in public health courses.

These scholarships are designed to meet the present emergency demand for public health nurses. They are intended particularly for nurses returning from the front, or leaving military service in hospitals and cantonments here at home, and for members of senior classes in nursing schools, the great part of whom had pledged themselves to military service after graduating. But they will also be open to other trained nurses, and the national organization is to do everything possible to bring these opportunities within the reach of all nurses.

The scholarship fund, of which Mrs. Chester Bolton of Cleveland as chairman of the War and Reconstruction Program Committee, is in charge, is only one part of a program to increase the number of public health nurses in this country. To create a constant supply of nurses in the future, it is proposed to modify undergraduate hospital training courses in such a way that supervised public health training may be secured in various welfare agencies during the regular nursing training, and the necessity for postgraduate work be thus reduced. Efforts are also being made to increase the number of colleges and universities which offer special courses in social economics and other subjects designed to prepare for public health work.

This attempt on the part of the National Organization for Public Health Nursing, to bring about a readjustment of nurses' training, to meet the modern developments of the profession, and the new demands that are being made upon it, is of far-reaching importance.

When the war broke out there were 6,000 public health nurses in this country. The demand for them was steadily growing, even then, more rapidly than it could be supplied with efficiently trained women. The war has given a sudden great impetus to all public health work. The democratic ideals for which it was fought have made it imperative that the opportunity for health, as well as other opportunities, be made equal to all people. The dependence of armies upon the civilian population has made clear the importance of the health of the rank and file, and the work of the nurse in devastated countries and in cantonment zones in this country have illustrated the possibilities of public health service.

It is, in fact, recognized that any program for public welfare must be based on health, and reconstruction will apparently be attacked, first, from the public health angle, not only in this country, but in Europe. One great handicap of all such programs, however, is the present lack of properly trained nurses.

Surgeon General Rupert Blue, head of the United States Public Health Service, stated recently that there should be a public health nurse at work in every county.

Secretary of War Baker declares that "The public health nurse, one of the greatest forces in promoting national health, is needed in greatly increased numbers."

Secretary of Labor Wilson states: "Labor's reconstruction program must include a carefully formulated plan for repairing the physical waste and destruction of war by the conservation and renewal of national health. Public health nurses enter into such a program in many ways, in industrial, visiting and infant welfare service. To bring to every worker in our country the skilled care, many more public health nurses must be put to work in the community."

Miss Julia Lathrop, chief of the Children's Bureau, says: "In any program to save the lives of mothers and babies, public health nurses are essential. For that reason, all who are interested in the protection of childhood are watching eagerly the plans of such organizations as the National Organization for Public Health Nursing, to increase the number of public health nurses."

According to Miss Ella Phillips Crandall, executive secretary of the National Organization for Public Health Nursing, that organization feels: "It is of the greatest importance for all nursing authorities to turn their attention to the problem of training the public health nurse, training her adequately and training her quickly, in order that the heavy responsibility of such work shall not be assumed by untrained and inexperienced women, and that this great need of the people for care in sickness and education in health may be met."

Bureau of Information.

In order that nurses soon to be released from military duty may be advised in regard to the positions available to them in civilian service, the Red Cross has decided to establish a bureau of information in New York City.

This office will assist in every way possible in helping to meet the needs of the country, by having definite information on file in regard to the graduate nurses needed in our institutions. They will undertake to supply to these nurses information concerning the many hospitals and nursing schools that need their services.

In order that this information may be available for nurses being released from military duty in cantonment hospitals, such information as is necessary will be on file also in their division offices.

Accredited Nursing Schools.

At the regular meeting of the State Board of Health, held on January 4, the school of nursing in connection with the Emergency and General Hospital of Los Angeles was taken from the accredited list, as a result of their notification of the closing of their school of nursing.

At this same meeting, St. Catharine's Hospital of Santa Monica,* having been inspected and found to meet the requirements, has been accredited for one year.

*And the Fairmont Hospital of San Francisco.

LIST OF COUNTY AND CITY HEALTH OFFICERS.

Alameda County—

Dr. J. Hal Cope	Pleasanton
Alameda	Dr. A. Hieronymus
Albany	Dr. J. F. Diddle
Berkeley	Dr. J. J. Benton
Emeryville	Dr. A. T. Drennan
Hayward	Dr. F. W. Browning
Livermore	Dr. J. K. Warner
Oakland	Dr. Daniel Crosby
Piedmont	Dr. Benj. T. Mouser
Pleasanton	Dr. J. Hal Cope
San Leandro	Dr. Luther Michael

Alpine County—

——— ———	Markleeville

Amador County—

Dr. G. L. Lynch	Amador City
Jackson	H. E. Kay
Plymouth	W. J. Ninnis
Sutter Creek	T. W. Trudgen

Butte County—

Dr. L. L. Thompson	Gridley
Biggs	Sarah J. Hiett
Chico	W. H. Marshall
Gridley	Dr. L. Q. Thompson
Oroville	Dr. W. F. Gates

Calaveras County—

Dr. George F. Pache	Angels Camp
Angels Camp	Dr. E. W. Weirich

Colusa County—

Dr. G. W. Desrosier	Colusa
Colusa	Dr. G. W. Desrosier

Contra Costa County—

Dr. Chas. R. Blake	Richmond
Antioch	Dr. W. S. George
Concord	Dr. F. F. Neff
El Cerrito	Dr. J. F. Diddle
Hercules	Dr. C. T. Wetmore
Martinez	Dr. Edwin Merrithew
Pinole	Dr. M. L. Fernandez
Pittsburg	Dr. H. E. Peters
Richmond	Dr. Chas. R. Blake
Walnut Creek	Dr. C. R. Leech

Del Norte County—

Dr. E. M. Fine	Crescent City
Crescent City	Dr. E. M. Fine

El Dorado County—

Dr. S. H. Rantz	Placerville
Placerville	P. J. Hall

Fresno County—

Dr. G. L. Long	Fresno
Clovis	Dr. M. S. McMurtry
Coalinga	Dr. C. W. Hutchinson
Firebaugh	E. C. McWayne
Fowler	Chas. Chapman
Fresno	Dr. C. Mathewson
Kingsburg	Dr. T. D. Smith
Reedley	Dr. Chas. H. Traber
Sanger	——— ———
Selma	Dr. Fred H. Williams

Glenn County—

Dr. Etta S. Lund	Willows
Orland	Dr. S. Iglick
Willows	Dr. W. H. Walker

Humboldt County—

Dr. Carl T. Wallace	Eureka
Arcata	Dr. G. W. McKinnon
Blue Lake	Dr. Earl W. Hill
Eureka	Dr. L. A. Wing
Ferndale	Dr. J. J. Myers
Fortuna	Dr. Orville Rockwell

Imperial County—

Dr. L. C. House	El Centro
Brawley	Dr. Eugene Le Baron
Calexico	Dr. M. L. Parcels
El Centro	Dr. W. F. Peterson
Holtville	C. L. Gillett
Imperial	R. M. Thompson

Inyo County—

Dr. H. W. Cook	Big Pine
Bishop	Dr. D. M. Nicoll

Kern County—

Dr. C. A. Morris	Bakersfield
Bakersfield	Dr. P. J. Cuneo
Delano	Dr. J. R. Hicks
Maricopa	Dr. H. N. Taylor
McKittrick	Dr. Robert C. Dear
Taft	Dr. M. W. Pascoe
Tehachapi	Dr. E. F. O'Reilly

Kings County—

Dr. C. L. Scott	Hanford
Corcoran	Dr. L. O. Henrich
Hanford	Dr. A. S. Torrens
Lemoore	Dr. Blake Franklin

Lake County—

Dr. A. N. Craig	Kelseyville
Lakeport	——— ———

Lassen County—

——— ———	Susanville
Susanville	Mrs. Ralph Hart

Los Angeles County—

Dr. J. L. Pomeroy	Los Angeles
Alhambra	Dr. F. E. Corey
Arcadia	F. W. Treen
Avalon	Dr. J. J. Peckham
Azusa	Mrs. Nettie Dingman
Beverly Hills	Dr. J. R. Perry
Burbank	Dr. Frederick M. Rossiter
Claremont	Dr. J. I. Latimer
Compton	E. E. Elliott
Covina	Dr. J. A. Lepley
Culver City	Dr. W. F. Mortensen
Eagle Rock	Dr. C. H. Phinney
El Monte	Dr. B. B. Bolton
El Segundo	R. F. Davis
Glendale	Dr. R. E. Chase
Glendora	Dr. J. L. Pomeroy
Hermosa Beach	B. F. Brown
Huntington Park	Dr. Thos. J. DeVaughn
Inglewood	Dr. C. M. Graham
La Verne	Dr. J. E. Hubble
Long Beach	Dr. R. L. Taylor
Los Angeles	Dr. L. M. Powers
Manhattan Beach	Llewellyn Price
Monrovia	Dr. Chas. D. Gaylord
Monterey Park	Dr. J. S. Trewhella
Pasadena	Dr. J. S. Hibben
Pomona	Dr. N. J. Rice
Redondo Beach	Dr. A. C. Hendree
San Fernando	Dr. John M. Griffiths
San Gabriel	Dr. Wm. W. Worster
San Marino	Dr. W. LeMoyne Wills
Santa Monica	Dr. F. J. Wagner
Sierra Madre	Mrs. Amelia Jensen
South Pasadena	Dr. C. F. Metcalf
Venice	Dr. I. L. Magee
Vernon	Dr. L. J. Williams
Watts	Dr. J. L. Lamb
Whittier	Dr. D. E. Knight

Madera County—

Dr. J. L. Butin	Madera
Madera	Dr. J. L. Butin

Marin County—

Dr. J. H. Kuser	Novato
Belvedere	Dr. Florence Scott
Corte Madera	A. F. Roberts
Larkspur	Dr. L. Newman
Mill Valley	Theodore B. Thorndike
Ross	Dr. Thos. U. Smith
San Anselmo	Dr. O. W. Jones
San Rafael	Dr. W. F. Jones
Sausalito	——— ———

Mariposa County—

Dr. E. S. Scott	Mariposa

Mendocino County—

Dr. S. L. Rea	Ukiah
Fort Bragg	Dr. Harper Peddicord
Point Arena	Conrad Nicks
Potter Valley	W. T. Eddie
Ukiah	Dr. Lew K. Van Allen
Willits	Dr. F. G. Gunn

Merced County—

Dr. C. H. Castle	Merced
Gustine	Dr. C. E. Stagner
Los Banos	Dr. R. Jadaroia
Merced	Dr. W. E. Lilley

LIST OF COUNTY AND CITY HEALTH OFFICERS—Continued.

Modoc County—

Dr. John Stile	Alturas
Alturas	Dr. John Stile

Mono County—

——— ———	Bridgeport

Monterey County—

Dr. J. A. Beck	Salinas
Carmel-by-the-Sea	W. T. Kibler
King City	Mrs. R. H. Brunette
Monterey	Peter Sella
Pacific Grove	James P. Evans
Salinas	W. E. Hallock

Napa County—

Dr. O. T. Schulze	Napa
Calistoga	Harry Von Arx
Napa	E. L. Geiger
St. Helena	Wynn M. Powers

Nevada County—

Dr. Frank S. Baxter	Grass Valley
Grass Valley	Dr. Frank S. Baxter
Nevada City	Geo. H. Calanan

Orange County—

Dr. Arthur H. Domann	Santa Ana
Anaheim	Dr. J. W. Truxaw
Brea	——— ———
Fullerton	Dr. J. H. Lang
Huntington Beach	Dr. G. A. Shank
Newport Beach	J. A. Porter
Orange	Dr. J. C. Crawford
Santa Ana	Dr. J. I. Clark
Seal Beach	Dr. J. Park Dougall
Stanton	Dr. J. H. Swan

Placer County—

Dr. John Manson	Lincoln
Auburn	Dr. Theodore Snypp
Colfax	Dr. H. N. Miner
Lincoln	F. R. Elder
Rocklin	John H. Gregory
Roseville	G. W. Lohse

Plumas County—

Dr. M. B. Bolton	Quincy

Riverside County—

Dr. James G. Baird	Riverside
Banning	——— ———
Beaumont	Dr. F. D. West
Blythe	Dr. W. H. Chapman
Corona	Dr. W. S. Davis
Elsinore	Dr. G. E. Shank
Hemet	Dr. H. O. Miller
Perris	——— ———
Riverside	Dr. W. B. Wells
San Jacinto	Will H. Gray

Sacramento County—

Dr. J. H. Leimbach	Isleton
Sacramento	Dr. W. J. Hanna

San Benito County—

Dr. J. M. O'Donnell	Hollister
Hollister	Dr. J. M. O'Donnell
San Juan	W. S. Hayden

San Bernardino County—

——— ———	San Bernardino
Chino	Dr. Elgar Reed
Colton	Dr. C. F. Whitmer
Needles	Dr. A. S. Parker
Ontario	Dr. Calvert L. Emmons
Redlands	Dr. Wm. A. Taltavall
Rialto	Dr. L. P. Barbour
San Bernardino	Dr. F. M. Gardner
Upland	E. R. Bowman

San Diego County—

Dr. Carl S. Owen	San Diego
Chula Vista	——— ———
Coronado	Dr. Raffael Lorini
East San Diego	Dr. C. R. Carpenter
El Cajon	——— ———
Escondido	Dr. B. L. Crise
La Mera	Dr. A. D. Marks
National City	Dr. Theo. F. Johnson
Oceanside	Dr. R. S. Reid
San Diego	Dr. E. P. Chartres-Martin

San Francisco (city and county)—

Dr. W. C. Hassler	San Francisco

San Joaquin County—

Dr. John T. Davison	Stockton
Lodi	Dr. S. W. Hopkins
Manteca	James H. Rogers
Stockton	Dr. Minerva Goodman
Tracy	Dr. Allen R. Powers

San Luis Obispo County—

Dr. C. J. McGovern	San Luis Obispo
Arroyo Grande	Dr. H. S. Brown
Paso Robles	W. W. Hughes
San Luis Obispo	W. F. Cook

San Mateo County—

Dr. F. Holmes Smith	San Bruno
Burlingame	Dr. Jane H. Parkhurst
Daly City	Dr. A. H. Rankin
Hillsborough	C. M. Hirschey
Redwood City	Dr. J. E. Chapin
San Bruno	Dr. F. Holmes Smith
San Mateo	Dr. W. C. McLean
So. San Francisco	Dr. J. C. McGovern

Santa Barbara County—

Dr. G. S. Loveren	Santa Barbara
Lompoc	Dr. C. B. Constable
Santa Barbara	Geo. H. Hicks
Santa Maria	Dr. O. P. Paulding

Santa Cruz County—

Dr. Wm. H. Keck	Santa Cruz
Santa Cruz	Dr. A. N. Nittler
Watsonville	Dr. A. W. Bixby

Santa Clara County—

Dr. Wm. Simpson	San Jose
Alviso	Alice Davee
Gilroy	Dr. J. W. Thayer
Los Gatos	Dr. R. S. Anthony
Mayfield	Joseph Ponce
Morgan Hill	Dr. W. D. Miner
Mountain View	Dr. A. H. MacFarlane
Palo Alto	Louis Olson
San Jose	Dr. James B. Bullitt
Santa Clara	Dr. G. W. Fowler
Sunnyvale	Dr. H. H. Sheffield

Shasta County—

Dr. S. T. White	Redding
Kennett	Dr. J. P. Sandholt
Redding	E. A. Rolison

Sierra County—

Dr. O. A. Eckhardt	Downieville
Loyalton	Dr. L. G. Ede

Siskiyou County—

Dr. H. S. Warren	Montague
Dorris	Otha A. Wilkins
Dunsmuir	Herman Woodward
Etna	Dr. W. H. Haines
Fort Jones	T. J. Wayne
Montague	Hugh W. French
Sisson	Dr. Paul Wright
Yreka	Dr. W. F. Shaw

Solano County—

Dr. W. C. Jenney	Vacaville
Benicia	Dr. P. B. Fry
Dixon	H. G. Grove
Fairfield	F. L. Morrill
Rio Vista	Geo. Adcock
Suisun	Dr. A. G. Bailey
Vacaville	W. F. Hughes
Vallejo	Dr. E. A. Peterson

Sonoma County—

Dr. F. O. Pryor	Santa Rosa
Cloverdale	E. E. Gibbins
Healdsburg	Dr. J. W. Seawell
Petaluma	Dr. R. B. Duncan
Santa Rosa	Dr. R. M. Bonar
Sebastopol	Dr. W. J. Kerr
Sonoma	J. H. Albertson

Stanislaus County—

Dr. J. L. Hennemuth	Modesto
Modesto	Dr. J. W. Ransom
Newman	Dr. H. V. Armistead
Oakdale	Dr. E. R. Clarke
Turlock	Dr. C. E. Pearson

LIST OF COUNTY AND CITY HEALTH OFFICERS—Continued.

Sutter County—

Dr. W. L. Stephens	Meridian
Yuba City	Dr. J. H. Barr

Tehama County—

Dr. E. E. Thompson	Red Bluff
Corning	Dr. Caroline Howes
Red Bluff	Dr. Walter Gavey
Tehama	Dr. J. H. Belyea

Trinity County—

Dr. C. A. Curl	Weaverville

Tulare County—

Dr. A. W. Preston	Visalia
Dinuba	Dr. A. N. Loper
Exeter	Dr. W. R. Tyler
Lindsay	Dr. C. W. Locke
Porterville	Dr. O. C. Higgins
Tulare	Dr. J. B. Rosson
Visalia	Dr. A. W. Preston

Tuolumne County—

Dr. Wm. L. Hood	Sonora
Sonora	Dr. Wm. L. Hood

Ventura County—

Dr. A. A. Maulhardt	Oxnard
Fillmore	Dr. Will R. Manning
Oxnard	Dr. G. A. Broughton
Ventura	R. E. Brakey
Santa Paula	Dr. G. C. Nichols

Yolo County—

Dr. W. J. Blevins	Woodland
Davis	Dr. W. E. Bates
Winters	C. M. Norton
Woodland	Alice G. Thomas

Yuba County—

Dr. J. H. Barr	Marysville
Marysville	Dr. A. L. Miller
Wheatland	W. H. Niemeyer

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List of Diseases Reportable by Law

Anthrax
Beri-beri
Cerebrospinal Meningitis (Epidemic)
Chickenpox
Cholera, Asiatic
Dengue
Diphtheria
Dysentery
Erysipelas
German Measles
Glanders
*Gonococcus Infection
Hookworm
Influenza
Leprosy
Lethargic Encephalitis
Malaria
Measles
Mumps
Ophthalmia Neonatorum
Paratyphoid Fever
Pellagra
Plague
Pneumonia (Lobar)
Poliomyelitis
Rabies
Rocky Mountain Spotted (or Tick) Fever
Scarlet Fever
Smallpox
*Syphilis
Tetanus
Trachoma
Tuberculosis
Typhoid Fever
Typhus Fever
Whooping Cough
Yellow Fever

*Reported by office number. Name and address not required.

Quarantinable Diseases

Cerebrospinal Meningitis (Epidemic)
Cholera, Asiatic
Diphtheria
Leprosy
Plague
Poliomyelitis
Scarlet Fever
Smallpox
Typhus Fever
Yellow Fever

Section 16, Public Health Act. All physicians, nurses, clergymen, attendants, owners, proprietors, managers, employees, and persons living in or visiting any sick person in any hotel, lodging house, house, building, office, structure, or other place where any person shall be ill of any infectious, contagious, or communicable disease, shall promptly report such fact to the county, city and county, city, or other local health board or health officer, together with the name of the person, if known, and place where such person is confined, and nature of the disease, if known.

An epidemic of the common contagious diseases among school children has far more serious effects than the public ordinarily realizes. We have passed the time when every child must expect to have all the "children's diseases." We know that these diseases are preventable and when they are not prevented there are many undesirable results. In the first place, while neither measles nor mumps is likely to prove immediately fatal, they may have complications which will prove so, and we are just beginning to appreciate the fact that some of the complications may go unnoticed for years and that some of the so-called degenerative diseases of middle age have their origin in these acute infective diseases of childhood.

—EDWARD A. INGHAM.